

* UMASS/AMHERST *



312066 0285 2360 6

THE COMMONWEALTH OF MASSACHUSETTS
DISTRICT POLICE REPORT

1902

~~REDACTED~~
~~REDACTED~~
~~REDACTED~~
WITHDRAWN

ass IB Book M38 Vol.....

DOCUMENTS COLLECTION
LIBRARY AND INFORMATION CENTER
UNIVERSITY OF MASSACHUSETTS
AMHERST, MASS.

RECEIVED

DOCUMENTS



Digitized by the Internet Archive
in 2010 with funding from
Boston Library Consortium Member Libraries

PUBLIC DOCUMENT No. 32.

REPORT OF THE CHIEF

OF THE

MASSACHUSETTS DISTRICT POLICE,

FOR THE

YEAR ENDING DECEMBER 31, 1902,

INCLUDING THE

INSPECTION AND DETECTIVE DEPARTMENTS.



BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
18 POST OFFICE SQUARE.
1903.

APPROVED BY
THE STATE BOARD OF PUBLICATION.

Commonwealth of Massachusetts.

OFFICE OF THE CHIEF OF THE DISTRICT POLICE,
BOSTON, Jan. 1, 1903.

To His Excellency JOHN L. BATES, *Governor of the Commonwealth.*

GOVERNOR:—I have the honor to submit a report of the duties performed by the District Police for the year ending Dec. 31, 1902.

Very respectfully, your obedient servant,

RUFUS R. WADE,

Chief of District Police.

Commonwealth of Massachusetts.

REPORT.

In accordance with the provisions of section 2, chapter 108 of the Revised Laws of Massachusetts, it becomes my duty, as the chief officer of this department, to report in print to the Governor on or before the first day of January of each year, in relation to factories and public buildings. In the performance of such duty, I have the honor to submit my twenty-fourth annual report.

The number of officers in the several branches of the force, including the chief, is now fifty-seven, of whom thirty-six are detailed for service in the inspection department, thirteen are designated for detective duty, leaving eight for the important duties of the fire marshal's department. Among the important changes of legislation affecting this department since my last annual report are those contained in chapter 142, Acts of 1902, entitled, "An Act to transfer the powers and duties of the State Fire Marshal to the Massachusetts District Police."

SECTION 1. The office of state fire marshal and all offices thereunder are hereby abolished.

SECTION 2. A new department of the district police is hereby created, with the powers and duties heretofore conferred and imposed upon the state fire marshal, his deputy, clerk, assistants and aids. Said department shall be called the fire marshal's department, and there shall be assigned to it the following officers, who shall be appointed by the governor, each to hold office for the term of three years from the date of his appointment:—A deputy chief, who shall have all the powers and duties heretofore conferred and imposed upon the state fire marshal, and shall have charge of

the said department under the direction of the chief of the district police, at a salary of twenty-four hundred dollars a year; a chief aid, who shall have all the powers and duties heretofore conferred and imposed upon the deputy state fire marshal, at a salary of fifteen hundred dollars a year; and not more than six additional aids, each at a salary of one thousand dollars a year. The chief of the district police may appoint for service in said department a clerk and a stenographer, each at a salary of twelve hundred dollars a year. In the organization of the fire marshal's department any person now in the service of the state fire marshal may be appointed or employed without civil service examination. The chief of the district police may at his discretion exercise any of the powers and perform any of the duties of the deputy chief, and may at any time detail any of the members of the detective department of the district police for service in the fire marshal's department. The deputy chief shall submit the annual report of his official action to the chief of the district police, who shall transmit the same to the insurance commissioner.

SECTION 3. So much of section two of this act as authorizes the appointment of the members of the said fire marshal's department of the district police shall take effect upon the first day of May in the year nineteen hundred and two, and the remainder of this act shall take effect as soon as the members of said department are appointed and qualified. [*Approved March 4, 1902.*]

DISTRICT POLICE FORCE.

Inspection Department.

Some idea of the extent and nature of the duties may be had by reference to the statutes defining them; but not even the detailed reports of the several inspectors, made to this office, can give to those not familiar with the matter an adequate idea of the vast amount of labor performed by this department. The district police force is divided into seven distinct departments, as follows:—

First.—The examination and approval of plans for the proper construction of school and other public buildings coming under the provisions of the law relative to means of egress, fire-stopping to prevent the spread of fire, the proper heating and ventilating of school and other public buildings, and examination of buildings reported to be unsafe to life or limb. This work is assigned John T. White,

Joseph A. Moore, Edwin Y. Brown, Joseph M. Dyson, Warren S. Buxton and Frederick W. Merriam.

Second. — The examination and approval of plans of factories, apartment and tenement houses, also the proper fire-stopping, means of egress and sanitary provisions. This work is performed by Henry Splaine, Henry J. Bardwell, Ansel J. Cheney and John E. Foulds.

Third. — The enforcement of the laws regulating the employment of labor of women and minors in manufacturing, mechanical and mercantile establishments and workshops; guarding of machinery; the construction and safety appliances of elevators; ventilation of factories and workshops; provision of water-closets for the use of each sex employed in factories and workshops, and various other sanitary regulations; uniform hours for meals for women and young persons; communication between the engineer's room and each room where machinery is run by steam; proper safeguards at hatchways, elevator openings and well-holes in public buildings, factories and mercantile establishments; forbidding the use of portable seats in aisles or passageways in public halls, theatres, schoolhouses, churches, public buildings, etc., during any service or entertainment held therein; competent watchman and red lights in hotels; gongs or other proper alarms, and notices posted describing means of escape from fire in boarding and lodging houses above a fixed size, family and public hotels; prohibiting during working hours the locking of any inside or outside door of any building where operatives are employed; weekly payment of wages; and sundry other matters not necessary to describe, — are entrusted to Malcolm Sillars, Charles E. Burfitt, Edward B. Putnam, Joseph Halstrick, James R. Howes, Charles A. Dam, John J. Sheehan, John F. Tierney, Frank C. Wasley, Lewis F. F. Abbott, Arlon S. Atherton, Mary A. Nason and Mary E. Halley.

Fourth. — The granting of licenses to make, alter, repair or finish coats, vests, trousers or wearing apparel of any description in a room or apartment in a tenement or dwelling house is entrusted to John E. Griffin and John H. Plunkett.

Detective Department.

Fifth. — The officers assigned to this department are Frederick A. Rhoades, Jophanus H. Whitney, George Dunham, George C. Neal, George C. Pratt, Alfred B. Hodges, Daniel W. Hammond, Peleg F. Murray, Oliver L. Wood, Thomas A. Dexter, James McKay, Simeon F. Letteney and William H. Proctor.

[CHAPTER 413]

AN ACT RELATIVE TO APPOINTMENTS TO THE DETECTIVE DEPARTMENT OF THE DISTRICT POLICE.

Be it enacted, etc., as follows:

SECTION 1. Section twenty-one of chapter nineteen of the Revised Laws is hereby amended by inserting after the word "certified", in the ninth line, the words: — but this section shall not apply to the detective department of the district police, — and by striking out the word "But", in the same line, so as to read as follows: — *Section 21.* A veteran may apply for examination under the rules, and if he passes the examination, shall be preferred in appointment and employment to all persons not veterans. The commissioners shall cause the names of the veterans who pass the examination to be placed upon the eligible list in the order of their respective standing, above the names of all other applicants, and to be certified to the appointing officers for appointment and employment in preference to other applicants, and the appointment or employment shall be made from the list so certified, but this section shall not apply to the detective department of the district police. Nothing herein shall prevent the certification and employment of women.

SECTION 2. This act shall take effect upon its passage. [Approved May 22, 1902.]

Boiler Inspection Department.

Sixth. — The inspectors having in charge the examination of engineers and firemen and the inspection of steam boilers are Everett B. Dyer, Charles Ferguson, Louis Amell, Sturgis C. Baxter, John H. Kazar, John McGrath, Joseph H. McNeill, Freeman H. Sanborn, David H. Dyer and James B. DeShazo.

Fire Marshal's Department.

Seventh. — The enforcement of the provisions of chapter 32 of the Revised Laws is entrusted to Joseph E. Shaw, deputy chief in charge; Charles F. Rice, chief aid; James B. Dunn, James Anderson, George Crittendon, John H. Scott, Robert E. Molt and Maurice F. Casey, aids.

The clerical work of the several departments is performed by James P. Campbell, first clerk; James W. Hoyt, Charles W. Brigham and Belle C. Davis, clerks; Lucius W. Richardson and Harriette E. Stallings, stenographers.

EMPLOYMENT OF CHILDREN.

During my service as chief of this department I have seen the gradual rise and progress of legislation relative to the employment of child labor. The development of the labor question brought to the attention of successive Legislatures facts in relation to the employment of children; and, whether from motives of humanity or from other considerations, the Legislatures have, from 1874, when the so-called ten-hour law was enacted, down to the session of the present year, thrown the safeguard of law around the child workers, and protected them from the evil and dangers to which they were exposed by the cupidity or thoughtlessness of others.

In 1876 an act was passed prohibiting the employment of children under ten years of age. In 1883 the limit was extended or raised by providing that no child under twelve years of age should be employed during the hours in which the public schools were in session. Again in 1885 another change was made, which provided that no child under twelve years of age should be employed at any time during the day in which the public schools were in session. In 1888 these several statutes were repealed, and provisions were made that no child under thirteen years of age should be employed at any time in any factory, workshop or mercantile establishment, thereby raising the limit, without any qualification, to thirteen years; the statute also providing that no such child shall be employed except during the vacation of the public schools in the city or town where he resides, unless

the person or corporation employing him procured and kept on file a certificate and an employment ticket for such child as prescribed by law. Again in 1898 the limit was raised to fourteen years, and so remains at the present time. Restrictions as to the age, hours of employment, schooling and sanitary provisions for comfort and health have been made and enforced with a view to lessen as much as possible the evils which are admitted to be inherent in any industrial system which permits and encourages the employment of child labor.

It is instructive to note one fact. Amid all the changes in our politics and the tendencies of legislative bodies to conservative action, there has been a steady adherence to the policy of exercising vigilant oversight over the welfare of the child worker. The acts of successive Legislatures for needed reforms to secure protection to the child wage earner have resulted in benefits whose existence even had not been suspected. In former years I have traced the various steps herein indicated, and need not repeat the record. Looking back over a period of twenty-four years, it can be seen by a careful observer that great progress has been made in a most wonderful and beneficial degree, until to-day the Commonwealth of Massachusetts can boast of the best labor and industrial laws of any State in the Union.

EMPLOYMENT OF ILLITERATE MINORS.

One of the most interesting problems growing out of the employment of illiterate minors is that providing for their education. Several methods have found advocacy since the subject has become of general interest, but all have agreed that the broadest ideas of statesmanship demand that a thorough elementary education must be secured for all minors compelled to labor. General legislation for the free evening schools gave promise of a final solution of the matter. An important change has been made, perfecting certain provisions of the law relative to the employment of minors over fourteen years of age in any city or town where a public evening school is maintained, unless said minors are able to read at sight and write legibly simple sentences in the

English language, and also unless a proper certificate is shown, or, in lieu of such certificate, a record of his school attendance each week while the evening school is in session. It has been contended that knowledge of the English language should not be required in the cases where adequate elementary education in some other language might be shown, but this objection does not rest upon a solid foundation. Minors whose permanent homes are to be in this country, who expect to earn their living here and become citizens, should be required by law to learn to speak and write the English language. Other languages may be deemed accomplishments, but the English language should be a legal necessity. Citizenship in the State cannot be acquired by, and ought not to be granted to, any who are unwilling to learn to read and write the English language. The amended law is as follows:—

[CHAPTER 183.]

AN ACT RELATIVE TO THE EMPLOYMENT OF CERTAIN MINORS.

Be it enacted, etc., as follows:

SECTION 1. Section thirty-five of chapter one hundred and six of the Revised Laws is hereby amended by striking out the word "cannot", in the third line, and inserting in place thereof the words:—does not have a certificate signed by the superintendent of schools, or by the school committee, or by some person acting under authority thereof, certifying to the minor's ability to,—also by inserting after the word "cause", in the seventeenth line, the words:—Any minor not holding the certificate described above shall furnish to his employer a record of his school attendance each week while the evening school is in session, and when this record shows unexcused absences from the sessions his attendance shall be deemed irregular according to this act,—so as to read as follows:—*Section 35.* While a public evening school is maintained in the city or town in which any minor who is over fourteen years of age and who does not have a certificate signed by the superintendent of schools, or by the school committee, or by some person acting under authority thereof, certifying to the minor's ability to read at sight and write legibly simple sentences in the English language resides, no person shall employ him and no parent, guardian or custodian shall permit him to be employed unless he is a regular attendant at such evening school or at a day school; but, upon presentation by such minor of a certificate signed by a registered

12 REPORT CHIEF OF DISTRICT POLICE. [Jan.

practising physician and satisfactory to the superintendent of schools, or, if there is no such superintendent, to the school committee, showing that his physical condition would render such attendance in addition to daily labor prejudicial to his health, said superintendent or school committee shall issue a permit authorizing the employment of such minor for such period as said superintendent or school committee may determine. Said superintendent or school committee, or teachers acting under authority thereof, may excuse any absence from such evening school which arises from justifiable cause. Any minor not holding the certificate described above shall furnish to his employer a record of his school attendance each week while the evening school is in session, and when this record shows unexcused absences from the sessions his attendance shall be deemed irregular according to this act. Whoever employs a minor in violation of the provisions of this section shall forfeit not more than one hundred dollars for each offence to the use of the evening schools of such city or town. A parent, guardian or custodian who permits a minor under his control to be employed in violation of the provisions of this section shall forfeit not more than twenty dollars to the use of the evening schools of such city or town.

SECTION 2. This act shall take effect upon its passage. [Approved March 13, 1902.

AMENDED FORM OF PRINTED NOTICE.

In the enforcement of the law relative to the employment of women and minors in manufacturing, mechanical and mercantile establishments, it became evident that the section of the statute as to the form of the printed notice, provided by the chief of the District Police, after the approval of the Attorney-General, was liable to serious misconstruction, and, in fact, was taken advantage of by some, so as to cover a substantial evasion of the law. "At any other time than as stated in said printed notice" is a clear and definite meaning of the real intent and purpose of the law, and will make its enforcement more certain.

My experience in the enforcement of the so-called labor laws satisfies me that, when the legal requirements are plainly understood by our manufacturers and business men, there will be no spirit of evasion or opposition, but a disposition to comply in good faith; and I anticipate the best

results from the amended statute in the direction of shortening the hours of labor for women and minors under eighteen years of age. The change in question is as follows:—

[CHAPTER 435.]

AN ACT RELATIVE TO THE EMPLOYMENT OF WOMEN AND CHILDREN
IN MANUFACTURING AND MECHANICAL ESTABLISHMENTS.

Be it enacted, etc., as follows:

SECTION 1. Section twenty-four of chapter one hundred and six of the Revised Laws is hereby amended by striking out the words "for a longer time in a day than that so stated", in the seventeenth line, and inserting in place thereof the words:— at any time other than as stated in said printed notice,— so as to read as follows:— *Section 24.* No child under eighteen years of age and no woman shall be employed in laboring in a manufacturing or mechanical establishment more than ten hours in any one day, except as hereinafter provided in this section, unless a different apportionment of the hours of labor is made for the sole purpose of making a shorter day's work for one day of the week; and in no case shall the hours of labor exceed fifty-eight in a week. Every employer shall post in a conspicuous place in every room in which such persons are employed a printed notice stating the number of hours' work required of them on each day of the week, the hours of commencing and stopping work, and the hours when the time allowed for meals begins and ends or, in the case of establishments exempted from the provisions of sections thirty-six and thirty-seven, the time, if any, allowed for meals. The printed forms of such notices shall be provided by the chief of the district police, after approval by the attorney-general. The employment of such person at any time other than as stated in said printed notice shall be deemed a violation of the provisions of this section unless it appears that such employment was to make up time lost on a previous day of the same week in consequence of the stopping of machinery upon which he was employed or dependent for employment; but no stopping of machinery for less than thirty consecutive minutes shall justify such overtime employment, nor shall such overtime employment be authorized until a written report of the day and hour of its occurrence and its duration is sent to the chief of the district police or to an inspector of factories and public buildings.

SECTION 2. This act shall take effect upon its passage. [Approved June 3, 1902.

WHOLESAOME DRINKING WATER DURING WORKING HOURS.

Besides other considerations, the nature of certain employments in manufacturing establishments makes it indispensable that during working hours the operative shall have free access to fresh and pure drinking water. It is more than a question of comfort and convenience; it affects health, and makes more satisfactory the conditions under which thousands labor. The recent statute is in the line of previous legislation for health and sanitary improvement and protection in all manufacturing establishments. The statute is as follows:—

[CHAPTER 322.]

AN ACT TO REQUIRE MANUFACTURING ESTABLISHMENTS TO SUPPLY THEIR EMPLOYEES WITH PURE DRINKING WATER DURING WORKING HOURS.

Be it enacted, etc., as follows:

SECTION 1. All manufacturing establishments in this Commonwealth shall provide fresh and pure drinking water, to which their employees shall have access during working hours.

SECTION 2. Any corporation, association, firm or person owning, in whole or in part, managing, controlling or superintending any manufacturing establishment in which the provision of this act is violated shall, upon complaint of the board of health of the city or town, or of the selectmen of the town in which the establishment is located, be liable to a fine of one hundred dollars for each offence. [Approved April 18, 1902.]

ELEVATORS.

Any legislation which affords additional protection to life and limb deserves the careful consideration of those who are in any respect responsible for the safety of others. The carelessness of those who in many instances operate elevators, and who have the safety of human life in their care, seems to be the source of very many accidents. Mismanagement in the running of elevators has entailed the loss of many lives and the maiming of many persons.

Very seldom are so-called elevator accidents on passenger elevators occasioned by the breaking of the hoisting cable or the machinery that lifts it. The safety devices employed

are usually so effective that the breaking of the cable does not result in injury to the occupants of the car. The safe construction of elevators used for passengers and freight and the requirement of suitable mechanical appliances and devices for the prevention of accidents, such construction work and devices being subject to the approval of the inspector of factories and public buildings, in the manner required by law, has resulted in the prevention of certain accidents that formerly were much too common. This may be seen by an inspection of the annual reports made to this department.

As the use of elevators rapidly increased, the practice of employing incompetent persons, in many cases mere boys, became a serious evil. It became evident that some restrictions should be applied to prevent the employment of inexperienced persons in the operation of elevators. The Legislature accordingly amended the law as follows:—

[CHAPTER 350.]

AN ACT RELATIVE TO THE OPERATION AND CUSTODY OF ELEVATORS.

Be it enacted, etc., as follows:

SECTION 1. All elevators for the carriage of freight or passengers, running at a speed of more than one hundred feet a minute, shall be operated by competent persons not less than eighteen years of age, and no other person shall operate or have the care or charge of such an elevator.

SECTION 2. No elevator for the carriage of freight or passengers shall be operated by or placed in charge of any person under sixteen years of age.

SECTION 3. Any person, firm or corporation violating any provision of this act by operating or causing an elevator to be operated or to be taken care or charge of in any manner contrary to the provisions of this act shall be punished by a fine of not less than twenty-five nor more than one hundred dollars for each offence.

SECTION 4. So much of any act as is inconsistent herewith is hereby repealed. [Approved April 29, 1902.

SANITARY PROVISIONS IN FACTORIES AND WORKSHOPS.

While great reforms have been made in the interest of women employed as operatives and in similar ways, there are special reasons why incessant vigilance must be exercised to secure for them adequate protection from injustice, and the best sanitary conditions.

It has been claimed that the Commonwealth is indifferent to the welfare of women employees. The legislation in protection of their rights as workwomen shows the contrary. The most rigid sanitary regulations are provided in the interest of comfort, decency and health. These relate to factories in which five or more persons are employed, and factories, workshops, mercantile or other establishments or offices in which two or more young persons under eighteen years of age or women are employed, also to schoolhouses and public buildings. It is required that they shall be kept free from effluvia arising from any drain, privy or nuisance, and shall be provided, within reasonable access, with a sufficient number of proper water-closets, earth closets or privies ; and whenever two or more males and two or more females are employed together, a sufficient number of separate water-closets, earth closets or privies shall be provided for the use of each sex, and plainly designated, and no person shall be allowed to use a closet or privy which is provided for persons of the other sex. It is also provided that factories in which five or more persons, and workshops in which five or more women or young persons, are employed, shall during work hours be so ventilated that air shall not become so impaired as to be injurious to the health of the persons employed therein, and so that all gases, vapors, dust or other impurities injurious to health, which are generated in the course of the manufacturing process or handicraft carried on therein, shall, so far as practicable, be rendered harmless.

The inspectors of factories and public buildings are required to enforce such sanitary and ventilating provisions for public buildings and schoolhouses, and make such further changes in order to secure suitable ventilation, which may

be required and which can be provided without unreasonable expense. The power of the inspectors to enforce these provisions is ample, and the results of their inspections have abundantly shown the amount of good accomplished.

IN RELATION TO THE INSPECTION OF BOILERS, AND ENGINEERS' LICENSE LAWS.

It seems fitting that a few words be said in regard to the State law which governs the licensing of engineers. This is annually the subject of much discussion, which on the whole is generally very misguided and without any practical result. Those who are directly affected by the law or come in contact with it seem to be perfectly satisfied with it, and consequently the Legislature shows no disposition to alter it to suit the pleasures of a minority, who are opposed to it on general principles. When the law was first presented to the House, its framers inserted several clauses which they believed necessary to appease certain political elements of the community, and which had very little bearing on the main issue. At the time it was expected that these different bodies would see the real good of the law, and consent to its being amended to do away with the features which were necessary to insure its passage. Instead, however, of considering these features, the engineers, through their representatives at the State House, have been trying year after year to have presented an entirely new bill, which would completely change the tenor of the law, and seriously alter its effect. The result quite naturally is that the Legislature does not entertain any of the propositions to make a change. So far it has seemed almost impossible for the engineers to agree among themselves as to what changes they think ought to be made. Among those who are dissatisfied with the law there exists a great diversity of opinion, which in itself may be taken as an indication that the law is all right, or its enemies would not be so divided. The friends of the law, and they are very numerous, have no complaint whatsoever to make. From many other States of the Union have come commendations of the statute, while inspectors and examiners from other sections speak in flattering terms of the com-

petency of the Massachusetts engineers who have been licensed under the present law.

The boiler inspection law still remains the same, and has been found to meet all the requirements of the situation. Under its operation there have been no explosions of steam boilers in Massachusetts for the past four or five years. This record is indeed notable, for there is not a State in the Union which can show one as clean. According to the figures of the Hartford Steam Boiler Inspection Company, the following explosions have occurred in the United States during the past five years : —

Number of boiler explosions,	1,600
Number of persons killed,	1,184
Number of persons injured,	2,448
<hr/>	
Total killed and injured,	3,632
Average number killed and injured per day,	2.52
Average number of explosions per day,	1.20

No record of the destruction of property could be made, for obvious reasons. While all this destruction of life and property has occurred in other States, not a single instance has come to light in Massachusetts. This is something upon which we should congratulate ourselves. We cannot always entirely eliminate boiler explosions, but the number of this species of accidents can be kept down to a minimum by careful boiler inspection. The good results we have experienced so far are due largely to the efficient license law, which requires that a man shall have a thorough knowledge of the care and operation of boilers before he receives official permission to take charge of them.

MANUFACTURE OF COTTON FABRICS, AND IMPROVEMENTS IN FACTORIES AND FACTORY LIFE.

The manufacture of cotton fabrics is of great antiquity. The army of Xerxes in India were clothed in cotton, as were the priests of Egypt. Virgil speaks of the cotton plant, and calls it "wool," and says that it was combed from the leaves. The Arabs in A.D. 627 carried it to Spain, where it was cultivated and woven. Columbus found the

natives clothed in cotton cloth when he landed in America in 1492. It is first mentioned as manufactured in England in 1641. The manufacture was most primitive until 1740. Between these dates the raw material was beaten with sticks, the fiber was straightened and paralleled by hand carding, and each thread spun singly on the old spinning wheel, which was in almost every household. The yarn from these wheels, spindles and distaffs was woven into cloth on hand looms, which were very imperfect machines. Between 1738 and 1780 the revolving cylinder for carding, the revolving rolls, fly shuttle and the power loom in 1785 by Cartwright, and improvements up to 1803 and 1813 did for weaving what Arkwright and others had done for spinning. For figured fabrics came the drop box by Kay in 1760, and the Jacquard loom in 1800, which caused a revolution in France in 1801. The cotton gin of Whitney came in 1794, when only four pounds or less were separated from the seed in one day by one person; while to-day four thousand pounds are a day's work of one machine; and, in spinning, a single machine of to-day will do what one thousand persons did at that time.

Following the line of important improvements, we have the dressing machine and warper in 1803; the successful power loom in 1805; cotton opener in 1814; first power loom in the United States in 1815 at Waltham; machinery for making sewing cotton in England in 1818; first Egyptian cotton imported to England in 1823; differential motion for roving frames, same year; tube speeder in 1824; self-acting mule in 1825; ring spinning in 1828; stop motion for drawing frames in 1832; ring spinning frames by William Mason in 1833; filling stop motion for looms, automatic let-off and important temple improvements by Draper in 1840; parallel shuttle motion in 1846; railway evener in 1850; card-cleaning tops by Wellman in 1853; shuttle-changing loom by Cheatham in 1859; first spindle patent to Atwood in 1866; double beam let-off Rabbeth spindle, thin place preventer, self-threading shuttle, spinning frame separator in 1868; bobbin holder, double-flange spinning rings, inside catch for shuttles, warper stop motion and the Pearl spindle in 1870. This covers most of the improvements in

cotton machinery, and will give the reader fair information regarding cotton and its manufacture until the year 1870.

The cotton factory of the year 1870 was a building generally of brick construction, about four stories in height, low-posted between floors, pitched roof, small window lights, rough floors, poor means of egress in case of fire, and all rooms from basement to attic filled with machinery. The elevators were without safety devices. The sanitary arrangements were faulty, and the closets over a raceway; hot rooms in summer and cold in winter. Ventilation was from open windows. Regarding the employment of women, there was no restriction as to hours of labor, but generally sixty-six per week was the rule. Children under fifteen years worked sixty hours per week. Children under ten years of age were not to be employed in manufacturing or mechanical establishments.

There was very little labor legislation at that time for the elevation of factory employees, and but little attention paid to what laws were passed. There appeared to be no one to enforce them. Children of eight years of age were employed without question. The dinner period was from thirty to forty-five minutes, many taking their dinners with them, not having time to go home and return. Long hours of labor with poor light from windows and lamps at dark prevailed. These are only a few of the complaints that may be recalled in some cotton mills of the early seventies.

In comparison with the factories and the condition of the factory operatives in 1870, attention may be called to a modern factory and modern working conditions. The modern mill is of brick construction, from four to six stories in height, one hundred feet or over in width, from twelve to fifteen feet between floors; flat roofed, with large windows close together; ventilating shafts, fans in windows, humidifiers to regulate the atmosphere, automatic sprinklers, hose and pails for fire use, smooth floors, egresses separate and fire-escapes well located; elevators with safety devices, automatic gates, covers or sliding hatch covers, electric alarm when in use, wire cables and platform under driving machinery; communication from all rooms to where power is generated; separate closets for sexes, plainly designated. The rooms are clean and free from dust; belting, shafting

and machinery are guarded as far as possible; fire-stops for prevention of spread of fire, doors to open out and not locked or obstructed to prevent free egress; explosive or inflammable compounds not to be placed to render hazardous the egress of operatives; hatchways and hoistways protected; no traversing mule carriage to travel within twelve inches of any pillar, column, pier or fixed structure; elevators running over one hundred feet per minute are to be operated by a competent person over eighteen years of age, under that speed the operative must be sixteen years of age. The machinery of the modern mill is of a high order, including all the important inventions of years of study of the manufacturing art. From picker to loom it seems as if human ingenuity could not improve more.

MODERN SCHOOLS.

A comparison of our recently constructed schoolhouses with those of fifty years ago will make manifest to any observer the immense improvement which has been made in such buildings; but it may be news to many people to be told that most of this improvement has been made in the last fifteen years, yet such is the fact. In many important matters, such as ventilation and sanitary work, buildings erected no more than twenty years ago will be found to be little if any better than the little red schoolhouses of the days of our grandfathers. In ventilation they are even worse. The older buildings were generally heated by stoves, and insufficiently heated at that; and people were not so afraid of a cold draught of air as they are now, and windows and doors were more freely used as means of ventilation than would be allowable in these modern days. With the advent of hot-air furnaces and steam boilers the heating of the schools was improved, but in many cases the ventilation was worse than before. The steam heating was at first done by what is known as the direct method, and of course furnished no fresh air to the pupils; while the aim of all dealers in hot-air furnaces seemed to be to supply as little air as possible and heat the rooms, and generally no provision was made for removing the air from the rooms when it became so foul as to be unfit for respiration.

The sanitary appliances in these more recent buildings could scarcely be called an improvement in any way over the outside privies of the older days, and on the score of health they were generally much worse. Poorly constructed water-closets and urinals and poor plumbing with insufficient ventilation were all that could be expected.

With the passage of the law requiring school buildings to have proper ventilation and sanitary appliances (chapter 149 of the Acts of the year 1888) began an improvement in such work which has extended to everything connected with the construction and arrangement of schoolhouses. The law of 1888 provides, in brief, that all schoolhouses shall be properly ventilated, and that the buildings shall be kept free from effluvia arising from any drain, privy or other nuisance. This latter provision was at first deemed by many as too rigid, because impracticable; but with improved appliances, properly located, and the thorough ventilation required by this department, no trouble is experienced in complying with the law, at least so far as odors have anything to do with effluvia; and our best schools are as free from objections in this respect as our private dwellings.

Considerable opposition has been made to the requirement of this department for a supply of thirty cubic feet of fresh air per minute to each person, in order to comply with the law. At this time it is a sufficient reply to this objection to note the fact that this requirement has been easily met and even much exceeded in recent work, and that the regulations of the department have become the recognized standard for ventilation not only in Massachusetts but in other States.

The great improvement in school buildings in the last fifteen years has not, however, stopped at ventilation. Our schools are better constructed, better lighted, more artistically designed, and every way better furnished than ever before. Every appliance for the comfort and convenience of pupils and teachers that money or skill can procure is provided. Increased safety from fire has been secured in many cases by fireproof stairs enclosed in brick walls, these walls being lined with glazed bricks or with common bricks painted and enamelled, thus eliminating combustible wood-

work. This construction has also extended to the corridors, where the walls are of brick. Where the partitions are of wood, hard plaster on metallic lathing is used in place of wood sheathing for the dadoes, the result being decreased danger from fire and a less amount of absorbent surface. The wood finish used is generally of the harder woods, such as oak or ash, or perhaps North Carolina pine, simply moulded, and finished in shellac or some hard finish. Greater attention is also paid to the lighting of the rooms, more and better arranged glass surface being used, the windows being carried up to within a few inches of the ceiling for better diffusion of light. The walls and ceilings are generally colored, blue-gray or green-gray on the walls being considered best for the eyes.

In the matter of heating, late improvements have been mostly in the line of simplicity of construction and economy in operation. In ventilation recent work leaves very little to be desired in results obtained. The following report of an inspection of one of our best schools will show what is being accomplished, the method in use being a simple gravity system with indirect steam heating:—

Report on Ventilation.

Date of inspection,	March 24, 1899.
Weather,	Fair.
Wind,	N. W., moderate.
Outside temperature (degrees F.),	36
Barometer,	29.9
Temperature of air entering room at inlet, average in rooms (degrees F.),	79
Air supply to each room (cubic feet per minute),	2,448
Air supply to each pupil (cubic feet per minute),	51
Air removed from each room (cubic feet per minute),	2,904
Air removed per pupil (cubic feet per minute),	61
Greatest air supply per room (cubic feet per minute),	2,705
Least supply (cubic feet per minute),	2,275
Greatest amount removed per room (cubic feet per minute),	3,042
Least amount (cubic feet per minute),	2,732
Greatest difference in temperature found in any room at different points on breathing line (degrees F.),	1
Average temperature in rooms at teacher's desk (degrees F.),	71

VENTILATION IN SCHOOL AND PUBLIC BUILDINGS.

Probably in no department of our legislation affecting the rights of our manual laborers has there been greater advancement than in that of sanitary inspection. Popular science has made familiar the facts relative to the dangers of bad drainage, insufficient ventilation and the like sources of disease and death, but not until the facts were brought to the attention of the Legislature in connection with our schoolhouses and other public buildings used as places of public entertainment or assemblage.

The heating and alleged ventilation of such buildings, until a few years ago, was of the simplest and most imperfect character. No man can fitly describe the actual condition of our schoolhouses, for instance, in which the foul air, bearing disease-breeding germs, laden with infectious and dangerous gases, filled every crowded room. The inspections made by the inspectors revealed the imperative necessity of immediate action. No more intelligent community exists upon the face of the earth than those among whom the state of things I have referred to was found. But it was not an easy task to move a community to action as an individual. Indifference, selfishness, incredulity and a general unwillingness to believe that the evils complained of were actually as bad as had been represented were among the obstacles to overcome. But those difficulties were at last surmounted, and we have stringent laws of sanitation, enforcement of which is cheerfully submitted to, and the results have been most beneficial.

It has been the rule of our department to obtain the best scientific information that is available, to make the most thorough tests of the various systems of ventilation brought to our notice, and to institute the most searching investigation into the condition of the schoolhouses and public buildings throughout our Commonwealth.

VENTILATION PRACTICALLY CONSIDERED.

What seems to be the most important essential for successful heating and ventilating consists in the invariable provision for some active, continuous and controllable motive power, by which a current of air is maintained through occupied space. This result can be obtained by the various mechanical systems. This system has been recommended, provided circumstances would warrant and it could be done without incurring an unreasonable expense. There are three classes of mechanical systems used in the State; the double mechanical, or both mechanical supply and exhaust; the gravity supply and mechanical exhaust; and the mechanical supply and gravity exhaust.

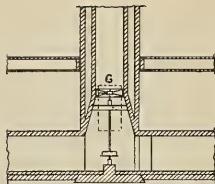
The double mechanical system is the most positive and uniform in action under varying conditions, and is particularly adapted to large buildings. It admits of taking and discharging the air at desired points and elevations, of a general primary heating chamber, which is of great advantage in regulating temperature in cold weather, of more uniform adjustment and of a practical return circulation for heating when the building is unoccupied.

The gravity supply and mechanical exhaust system is adapted to small or medium sized churches, halls and theatres; to school buildings of from four to ten rooms, and particularly so to such school buildings as have an assembly hall in the upper story, as the exhaust may have a downward course without special injury to the velocities and with small additional expense in power.

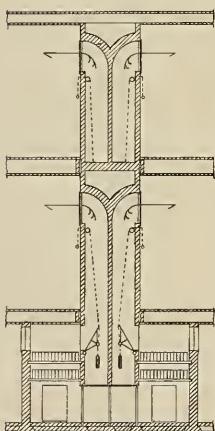
The mechanical supply and gravity exhaust system is adapted to a great variety of buildings, and has the advantage of the double mechanical system in taking the supply at desired points and elevations, and of the general primary heating chamber; also an advantage over the gravity supply and mechanical exhaust system. It is also more or less sensitive to the varying outside conditions, and, if installed in extremely exposed locations, it should be provided with approved method for regulating.

In conclusion, I will say that in my visits to the various buildings from time to time I find that those having mechanical systems are receiving proper care, and there is but little disposition upon the part of janitors, engineers and committees to experiment in line of supposed economy.

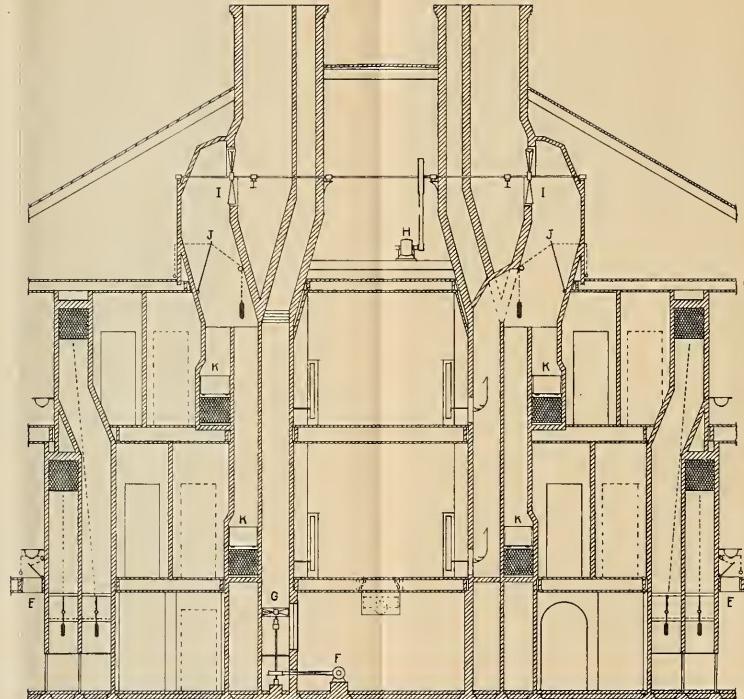
During the past year the requests for information on the subject of heating and ventilating school and other public buildings have been frequent. To all interested in this subject I present in this portion of my report plans showing reliable methods of ventilation, submitted to me by the inspectors assigned to this scientific branch of our inspection work.



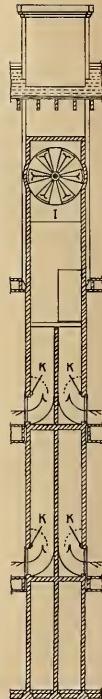
THROUGH D.D.



THROUGH B.B.



THROUGH A.A.



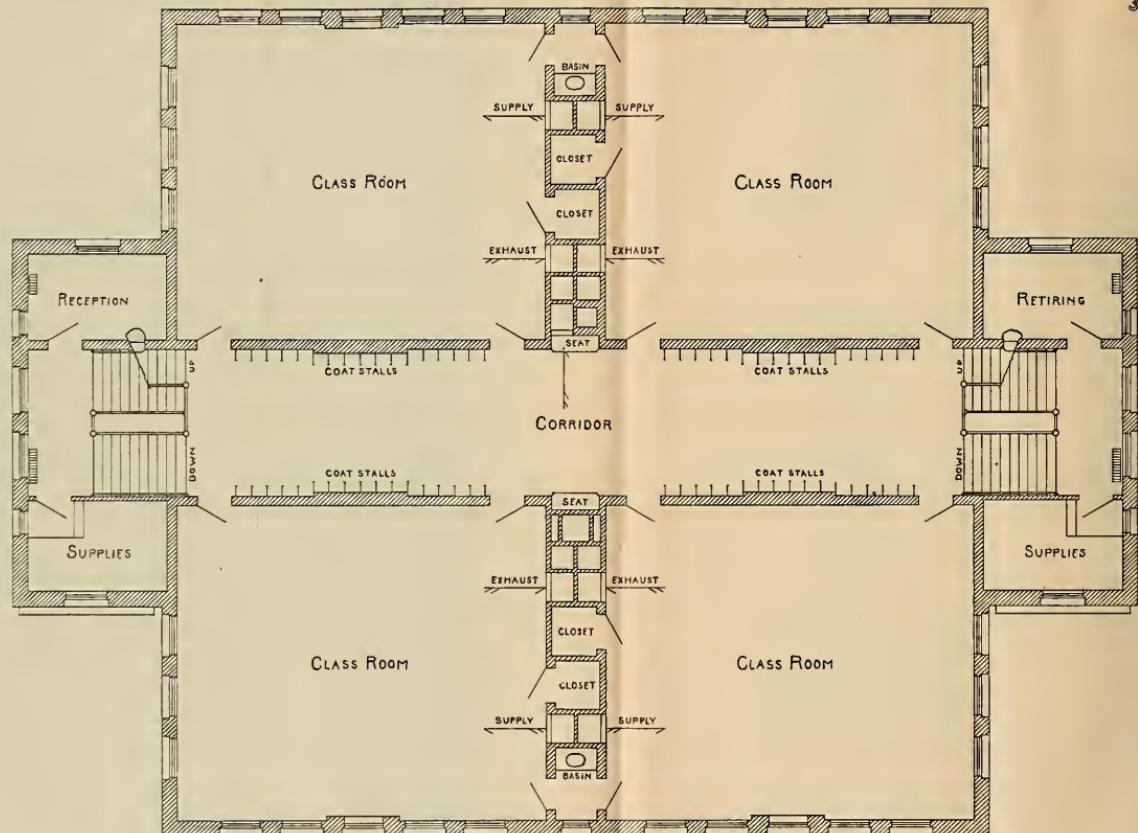
THROUGH C.C.

SECTIONAL VIEWS

PLEASANT STREET SCHOOL
GREENFIELD, MASS.

SCALE IN FEET

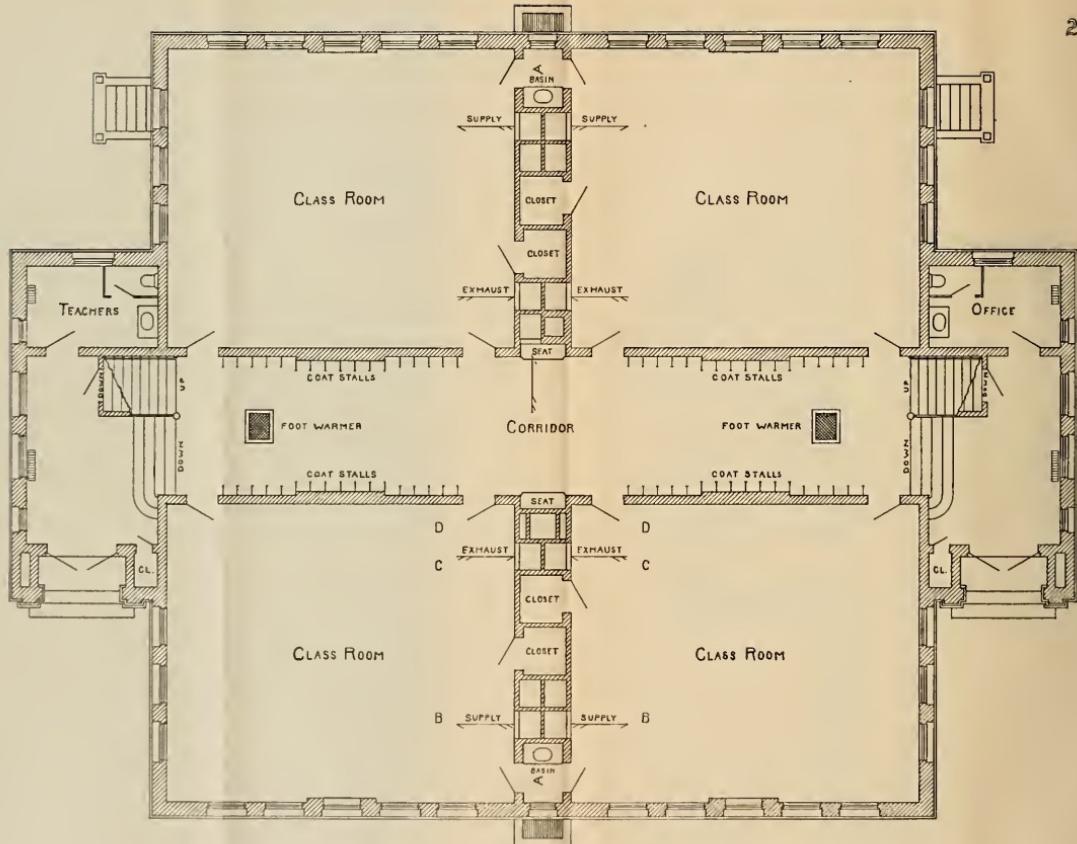
SUBMITTED BY
FRED'K W. MERRIAM, INSPECTOR.



PLEASANT STREET SCHOOL
GREENFIELD, MASS.

SECOND STORY

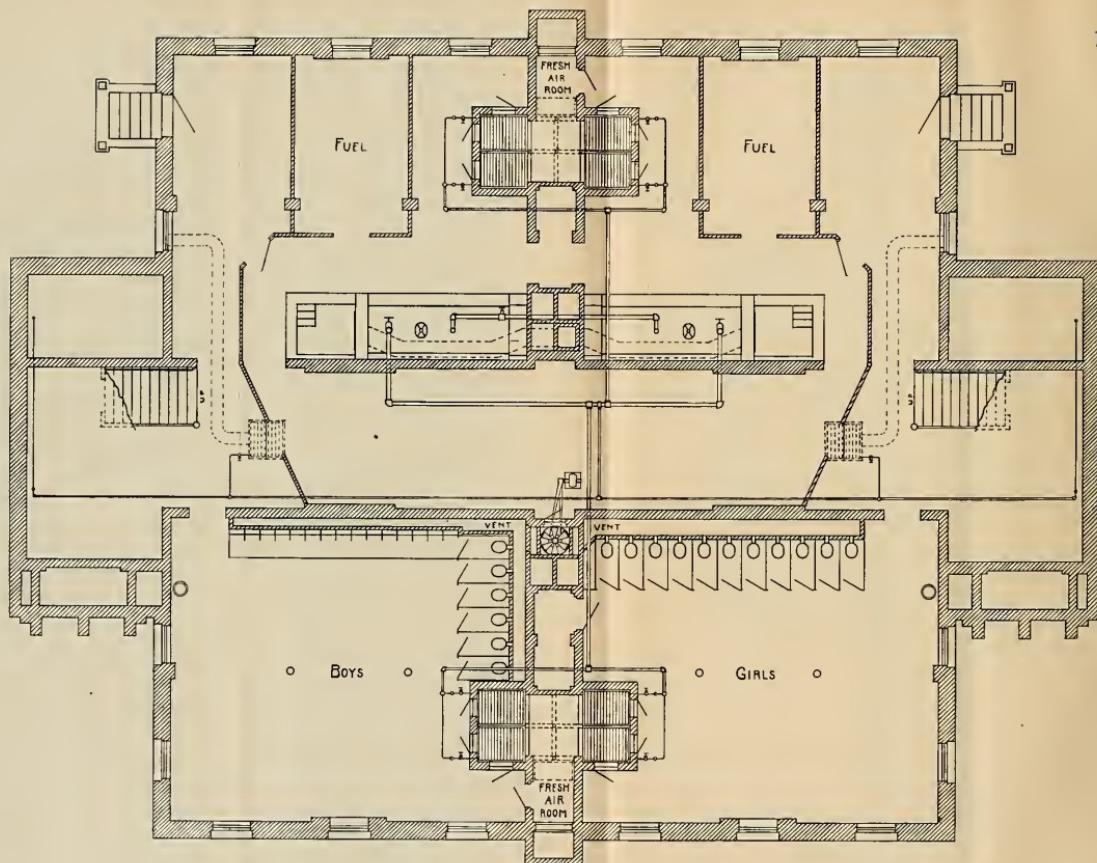
SUBMITTED BY
FRED'K W. MERRIAM, INSPECTOR.



PLEASANT STREET SCHOOL
GREENFIELD, MASS

FIRST STORY

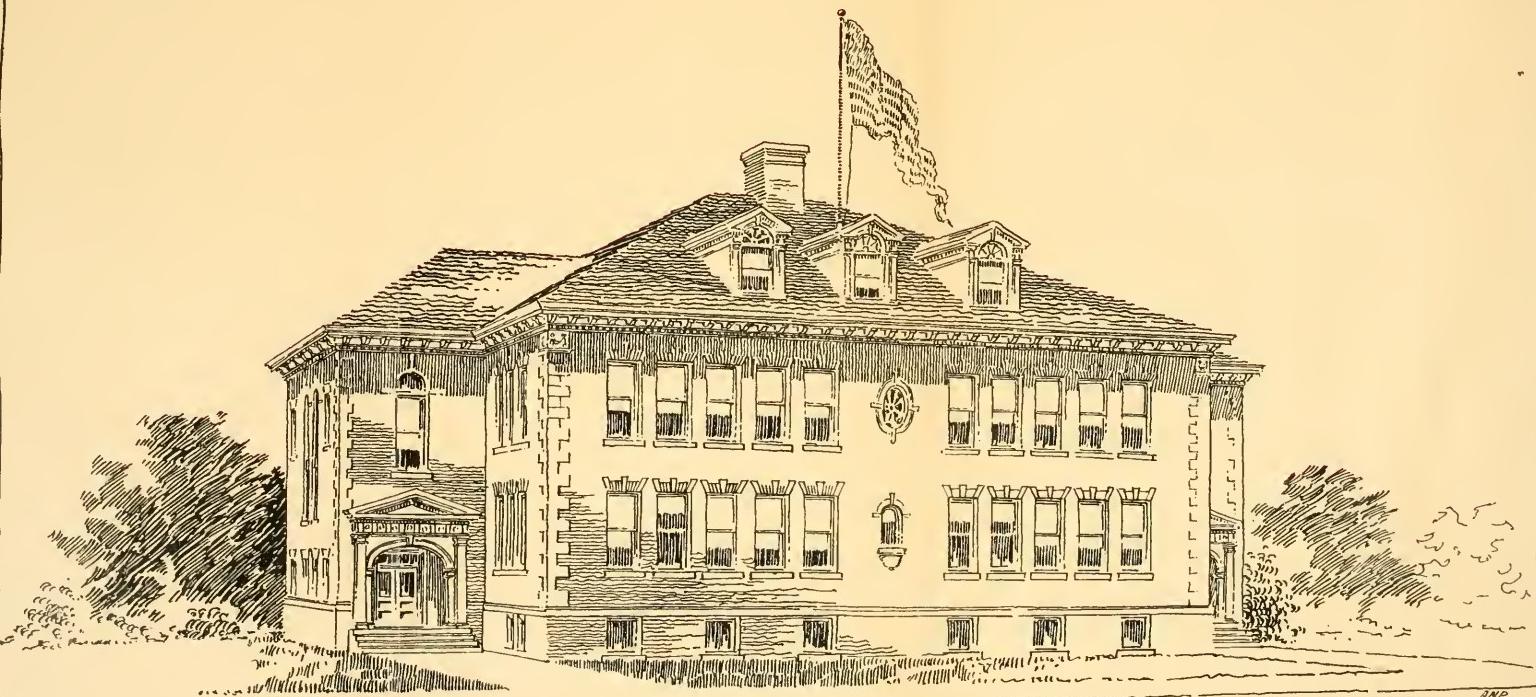
SUBMITTED BY
FRED'K W. MERRIAM, INSPECTOR.



PLEASANT STREET SCHOOL
GREENFIELD, MASS.

BASEMENT

SUBMITTED BY
FREDK W. MERRIAM, INSPECTOR.



- F R RICHMOND ARCHITECT -
~ SPRINGFIELD MASS. ~

DESCRIPTION OF PLANS FOR HEATING AND VENTILATING AN EIGHT-
ROOM SCHOOL BUILDING, SUBMITTED BY INSPECTOR FREDERICK
W. MERRIAM.

The plans and method of heating and ventilating are those of the Pleasant Street School, Greenfield, Mass., erected the past season, Mr. F. R. Richmond, architect, Springfield, Mass.

The building is of local brick, with brown-stone trimmings and slate roof, finished in hard wood throughout; including slate blackboards and modern furnishings. The perspective is furnished through the courtesy of the architect. The heating and ventilating is by steam, with gravity supply and mechanical exhaust.

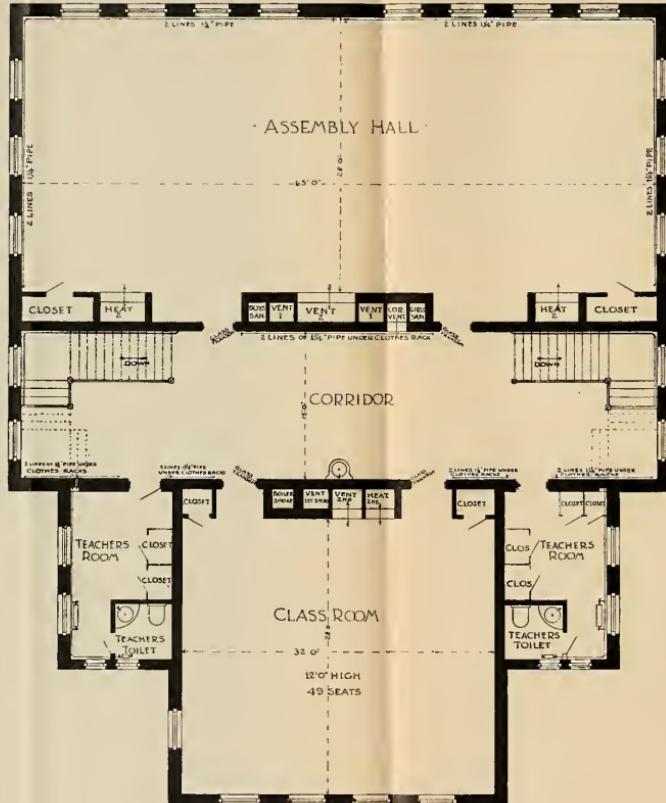
Plate 1, the basement, shows location of the two horizontal tubular boilers, arranged so that either or both may be used as circumstances require; the main steam pipes and connections with indirect heating surface; fresh-air rooms and indirect heating chambers; air supply for foot warmers; sanitary fixtures and vent ducts, and a small electric motor and fan for their proper ventilation at all seasons.

Plates 2 and 3, first and second stories, show entrances and stairways, corridors, with coat stalls, and foot warmers in that of first story; four class rooms, each 27 feet 10½ inches by 32 feet 4½ inches; office and teachers' room; with toilets, reception, retiring and two supply rooms off landings; book closets; and the supply and exhaust flues, which are of approved size and location. Each pass between class rooms is provided with an opening through the floors, with valves, under the basins, which may be used for returning the air from the class rooms for heating when the building is unoccupied, if desired. The landings and small rooms are provided with direct radiating surface.

Plate 4 shows four sectional views; for locations, see their respective letters, on Plate 2. *AA* is through the centre of the building from front to rear, giving the general arrangement of all the flues and mechanical apparatus; *BB* is through the indirect heating chambers and supply flues. The heaters are corrugated cast iron, all prime surface, and the mixing valves are of usual pattern, operated by chains in their respective rooms. *CC* is through the exhaust flues of class rooms, showing connections with fans; *DD* is through the sanitary vent ducts and flues in basement. Referring to this plate, *EE* are the openings through floors in passes and valves for returning the air in class rooms to indirect heating chambers; *F* and *G* are the small motor and fan for ventilating the sanitaries; *H* and *II* are the electric motor and

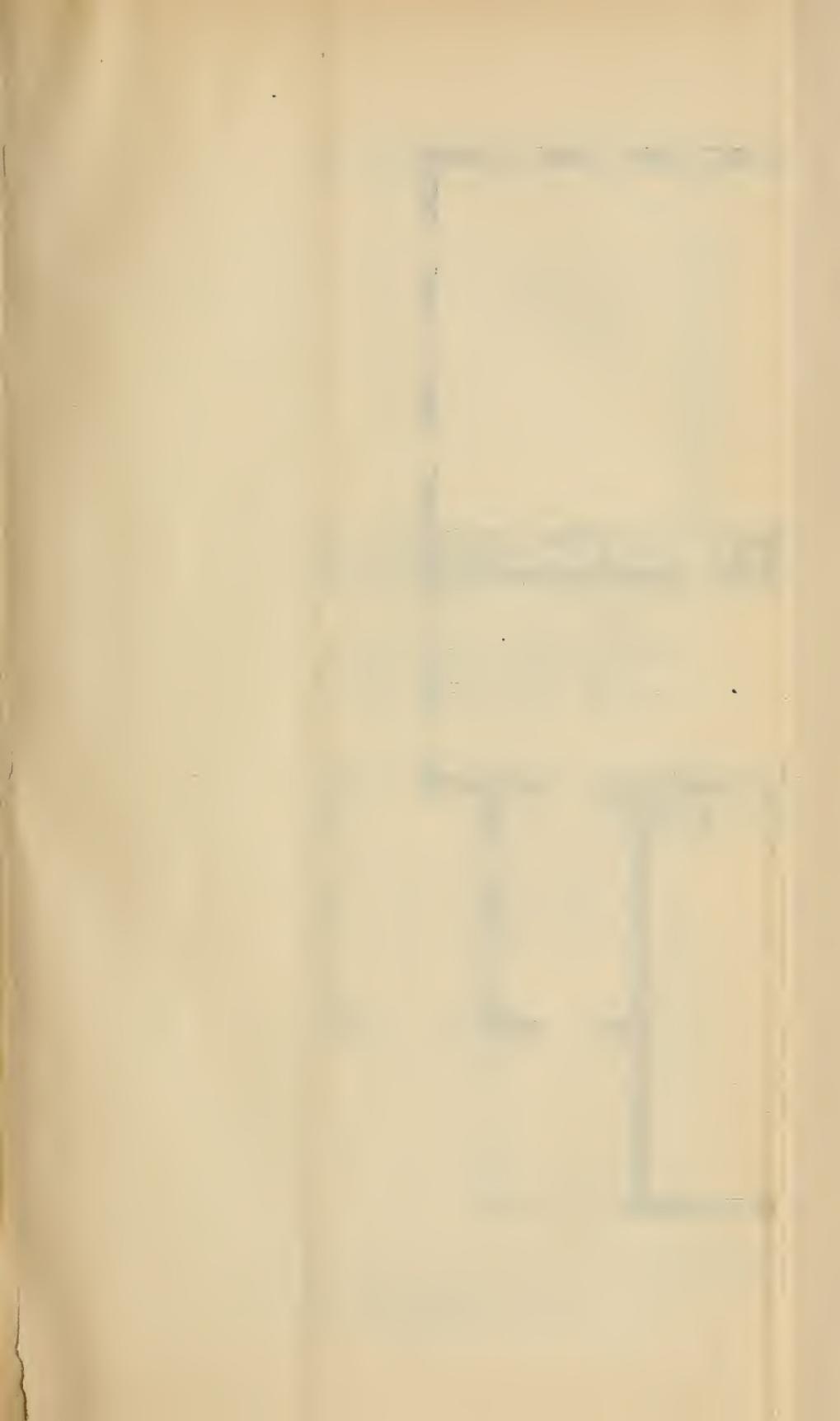
fans for exhaust from the eight class rooms and corridors; *JJ* are dampers to be operated by the janitor for regulating the exhaust, or shutting off the flues, when the building is unoccupied, if desired; *KK* are adjusting dampers over each of the class room exhaust grills, to regulate the velocities of their respective rooms.

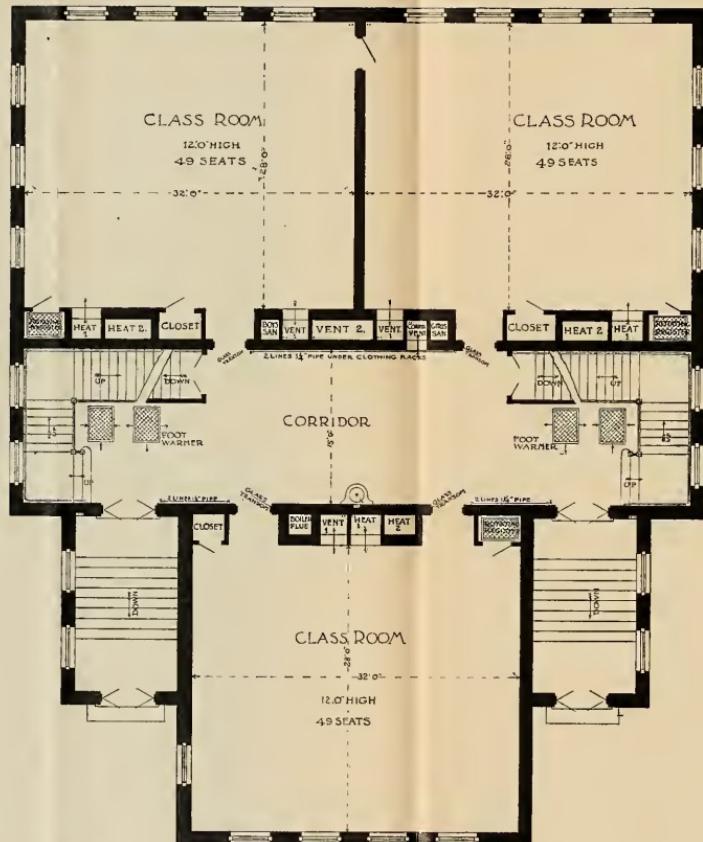
The motors and bearings rest either upon the basement bottom or in masonry, so that no vibration of the building is perceptible. The present speed of the fans and adjustment of the blades are such as to exhaust from each class room 2,500 cubic feet of air per minute; but can easily be changed so as to reduce that amount one-third for cold weather, if desired.



• FIVE ROOM SCHOOL •
• SECOND STORY •

- SHOWING HEATING AND VENTILATION -
- By INSPECTOR JOSEPH A. MOORE -
- 1902.

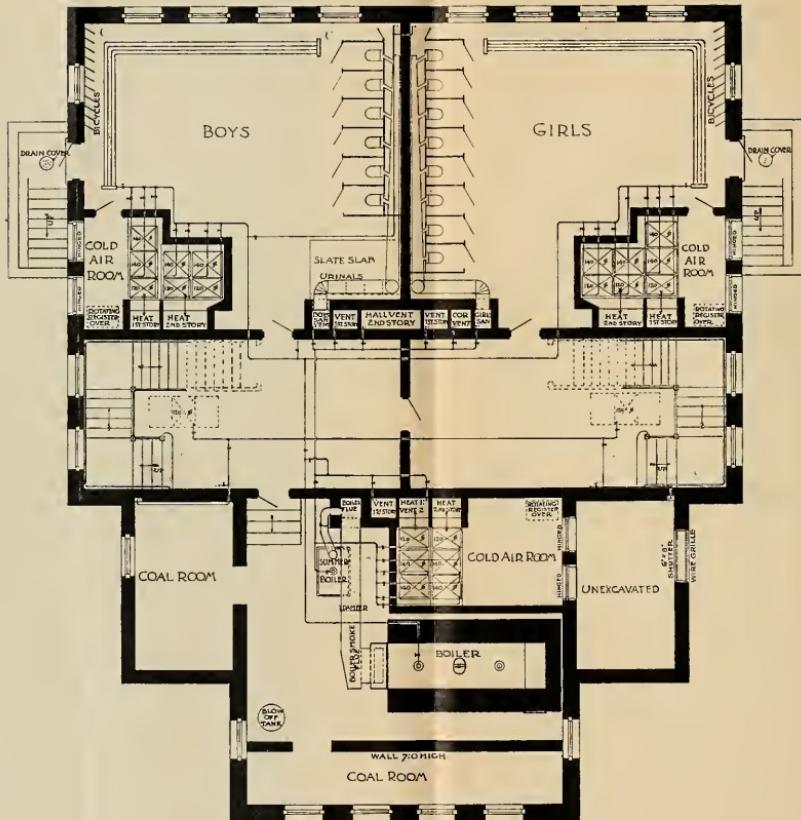




FIVE ROOM SCHOOL
FIRST STORY

SCALE OF FEET

SHOWING HEATING AND VENTILATION
By INSPECTOR JOSEPH A. MOORE
1902



FIVE ROOM SCHOOL.

BASEMENT.

SHOWING HEATING AND VENTILATION.

By INSPECTOR JOSEPH A. MOORE
1902

SCALE OF FEET
0 1 2 3 4 5 6 7 8

DESCRIPTION OF PLANS FOR HEATING AND VENTILATING A SCHOOL-HOUSE, DRAWN BY JOSEPH A. MOORE, STATE INSPECTOR OF PUBLIC BUILDINGS.

The building to be constructed of red brick, with granite trimmings, slated roof and copper gutters.

There are four class rooms and one large assembly room or hall, which can, if desired, be divided into two class rooms; also two small rooms in the second story for use of the teachers. In the basement are two sanitary rooms, cold-air rooms, boiler and fuel rooms.

The class rooms are of standard size, 28 by 32 by 12 feet, the seats being arranged to receive the light from the left and rear, the doors from the class and assembly rooms having each a large plate glass panel in the centre and transoms placed over the doors. The corridors are fifteen feet wide, with the pupils' clothing hung on special racks on the sides.

The warm fresh air is taken into the class rooms through openings covered with wire grills, 30 by 36 inches; in the assembly room the grills are 30 by 54 inches; these openings are 8 feet above the floor. The warm-air flues to the class rooms are 24 by 36 inches (6 square feet), and in the assembly room are 24 by 54 inches each. Each warm-air flue is provided with a galvanized-iron mixing damper, to regulate the temperature of the incoming fresh air without materially decreasing the supply.

The foul air is taken out at the floor level, through wire grills 24 by 30 inches (5 square feet). In the assembly room the outlet grill is 24 by 72 inches. Each outlet foul-air vent in the building except in the sanitary rooms is provided with a galvanized-iron damper, to regulate the outflow or shut it off when the building is not occupied.

In each class room vent are placed four sections of cast-iron radiators, each containing five square feet of heating surface (20 square feet); in the assembly hall vent are 9 sections of the same kind (45 square feet). This radiation is placed about 1 foot above the vent opening from the room. A vent flue 24 by 24 inches area is provided for the corridors, both corridors venting into the same flue, and 15 square feet of radiation is placed above the lower corridor vent opening. The sanitary vent flues are each 20 by 24 inches, and contain 15 square feet of radiation.

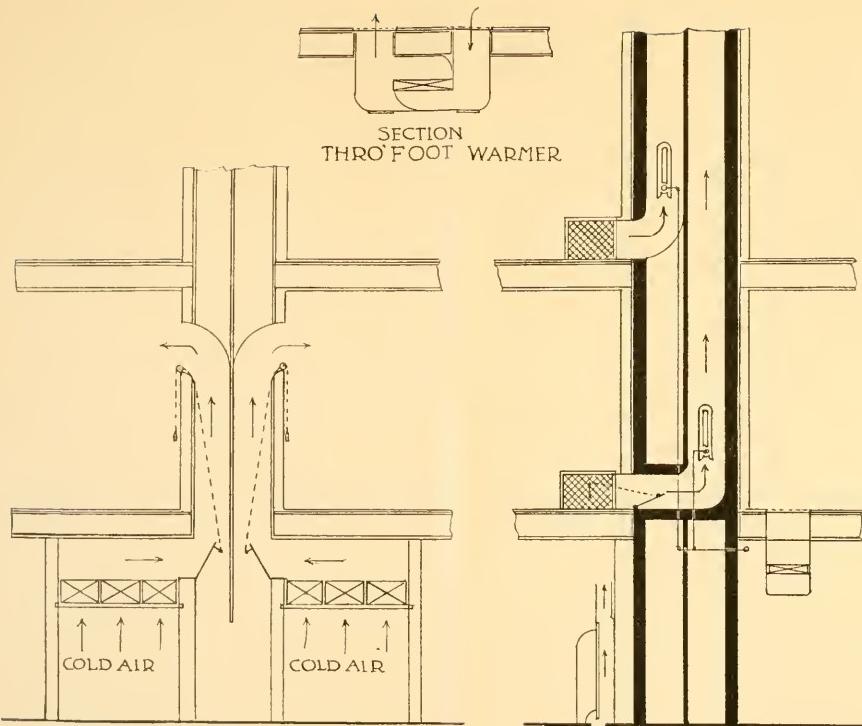
The heating is by a horizontal tubular boiler, 54 inches in diameter, 15 feet 3 inches long, containing 60 3-inch tubes 14 feet long, and rated at 48 horse-power. A small sectional boiler is also provided, for heating the vent flues when the large boiler is not in use.

The piping for the vent flues is so connected that either the large or small boiler may be used as desired.

The radiation for each class room consists of 400 square feet of cast-iron indirect radiators, of 20 square feet per section, made up into three stacks, each stack being separately piped and valved. The assembly room has two distinct groups of radiation, of 480 square feet each, and each group made up of four stacks, separately piped and valved. Two foot warmers, each of 120 square feet, of the same kind of radiation, are provided in the lower corridor. The sanitary rooms are heated by four lines of $1\frac{1}{4}$ inch pipe, placed near the ceiling. Two lines of $1\frac{1}{4}$ inch pipe are also provided in the corridors, and are placed under the clothing racks to dry the clothing in stormy weather. Direct radiation is also provided in the teachers' rooms and toilets. If desired, direct radiation can be placed in the vestibules.

In the floor of a closet in each first-story class room is placed a register connecting with the cold-air room below. A tight-fitting shutter of galvanized iron is placed below the register, to shut off the cold air from below when the register is not in use. When the rooms are not in use, and it is desired to rotate the air through the building, to save fuel, the outside windows in the cold-air rooms are closed, the register, closet and class room doors are opened, the vent ducts are closed, and the air is rotated through the building. The rotating register should never be used while the school is in session.

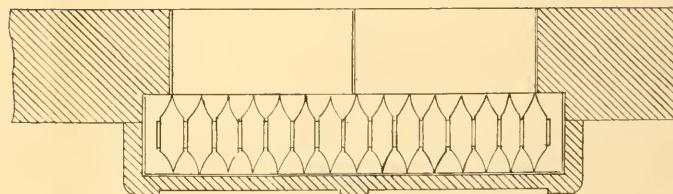
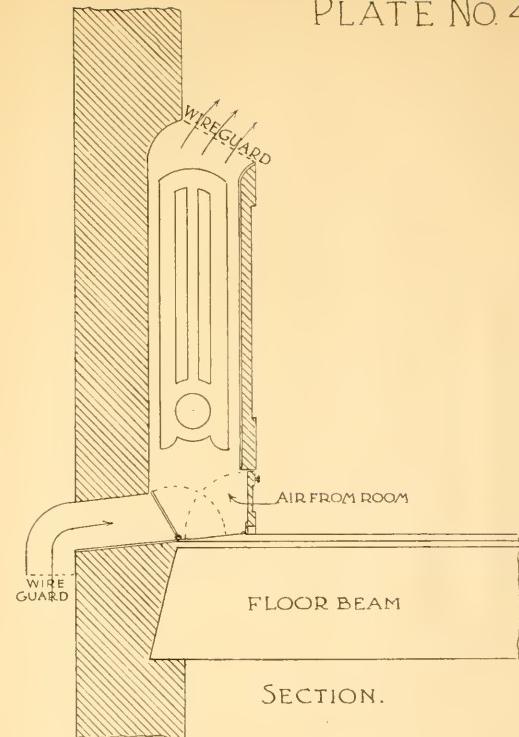
The ventilation of the sanitary rooms is through the fixtures, each closet having a 4-inch diameter seat vent, connected with a galvanized-iron duct leading from each line of closets to a steam-heated vent flue. The air from the sanitary rooms being taken out through the closet and urinal vents, prevents odors passing out of these rooms and up into the building, as is sometimes the case when the room is vented by a duct separate from that provided for the fixtures, or when air is forced into the room by a fan or gravity supply from the heating system. A plenum condition should not be allowed in such rooms, but an exhaust should be used instead. Sufficient air to keep the rooms free from odors will be taken into the sanitary rooms through the basement corridor doors, if a large wire grill is placed in the lower part of the door.



SECTION THROUGH RADIATORS ON LINE A-B.

SECTION THROUGH VENT. FLUES.

5
10
SCALE OF FEET.

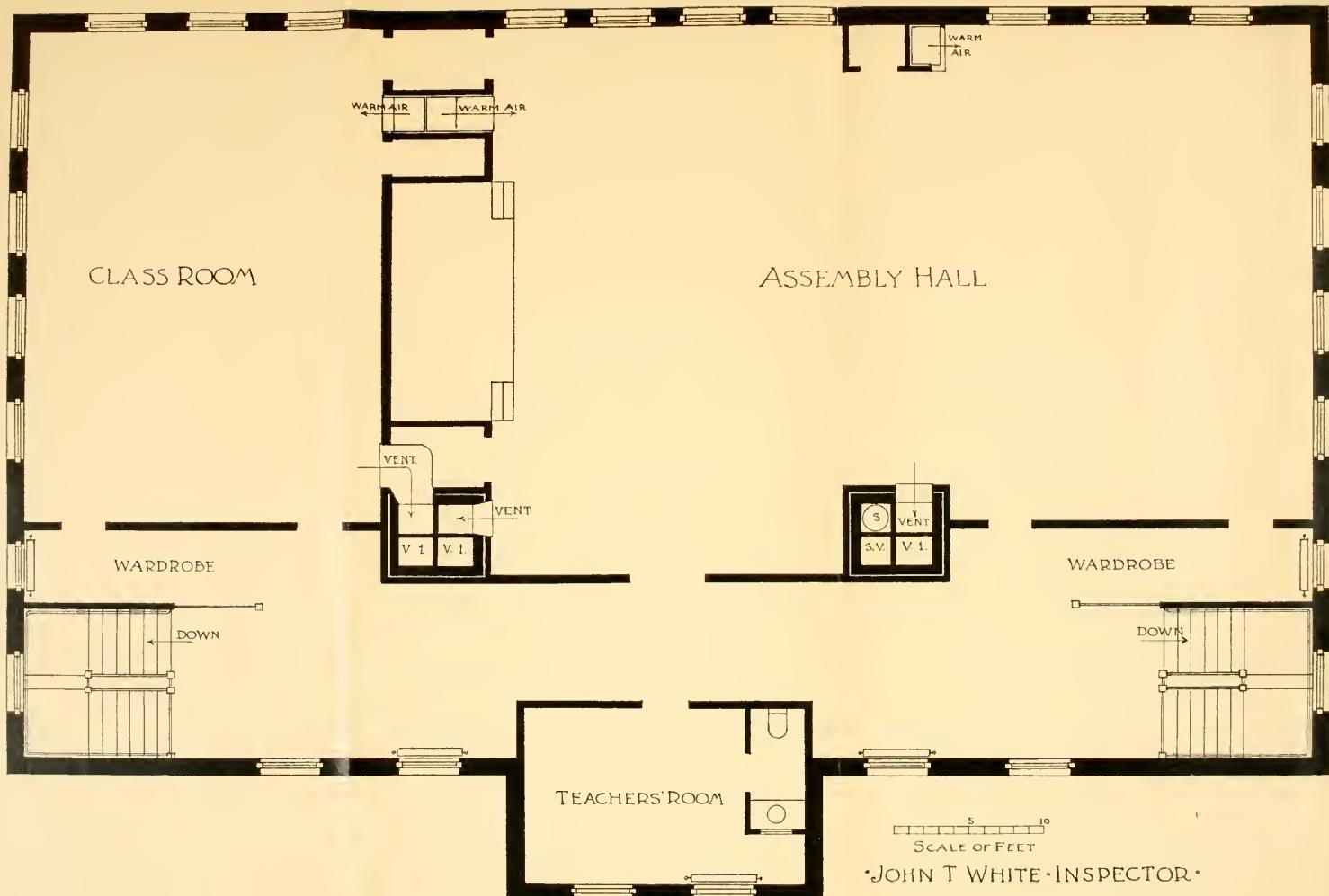


DESIGN FOR DIRECT-INDIRECT RADIATOR.

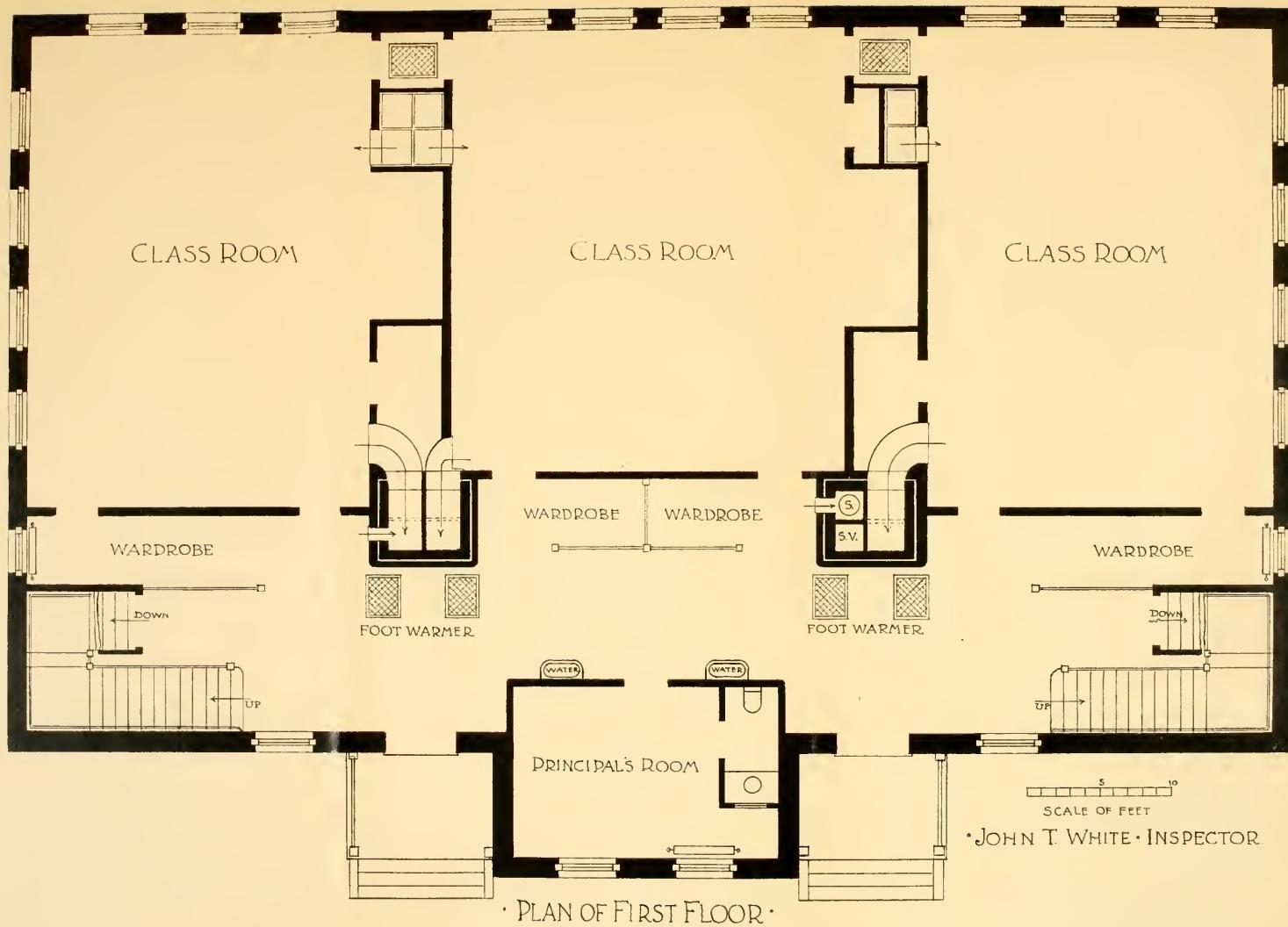
PLAN.

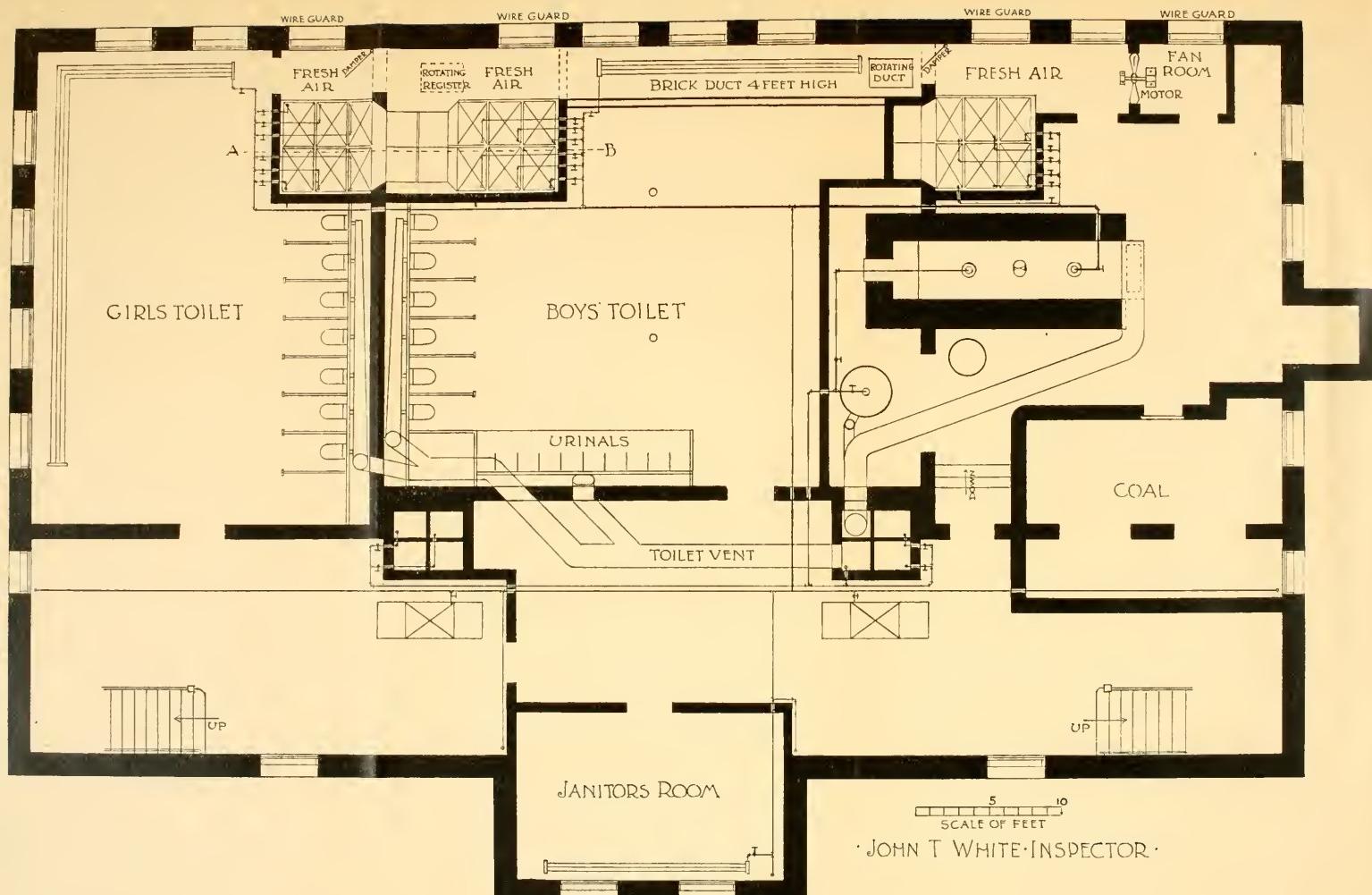
JOHN T WHITE INSPECTOR.

SCALE
ONE FOOT



• PLAN OF SECOND FLOOR •





• PLAN OF BASEMENT •

• JOHN T WHITE INSPECTOR •

DESCRIPTION OF PLANS FOR THE VENTILATION OF A SCHOOL BUILDING, SUBMITTED BY INSPECTOR JOHN T. WHITE.

No particular merit is claimed for this plan, which is similar to that of many six-room buildings, the object being to show the working out of a simple system for ventilation. The building, as shown, might be used for a four-room school, with hall on second floor; or for a high school, using the hall for an assembly schoolroom. By putting a partition across the hall, we have three schoolrooms on the second floor, all well ventilated.

Plate No. 1 shows the basement, with the fresh-air rooms, indirect radiators, boiler, playrooms, sanitaries and steam piping. The ventilation may be by a simple gravity system in the now usual method for such work, or a plenum fan may be used, as I have shown, supposing, of course, that some power, as electric or water motor, can be utilized to drive the fan. The toilet rooms are ventilated, in the manner always recommended by this department, through the fixtures into a heated flue.

Plate No. 2 shows the first floor with three class rooms, corridors, wardrobes, exits, stairways and a principal's room.

Plate No. 3 shows the second floor, with one class room and a large hall capable of seating 300 persons. There is also a teachers' room, with toilet. If it is desired to have a small class room instead of the teachers' room, provision might be made for a supply of air by direct-indirect radiators, arranged as shown on Plate No. 4. An extraction duct for foul air could of course be easily provided.

Plate No. 4 shows details of the system of ventilation, sectional drawings of the warm-air ducts, vent flues, dampers, etc. I have also shown on this plate a direct-indirect radiator, which is like the one shown on my plans last year, except that this one has, I think, an improved arrangement for dampers. This radiator may do very good work in small rooms or halls where it is difficult to use straight indirect radiation.

BUILDING INSPECTION DEPARTMENT.

REPORT OF INSPECTOR JOHN T. WHITE.

Class No. 1. District No. 1.

SIR: — I have the honor to submit the following report of my work as an inspector of public buildings during the past year.

I append hereto a summary of the work done, as far as it can be shown in such form. Of course the amount of time expended in examination of plans and in consultation and correspondence with owners of buildings, architects, contractors and others in regard to egress, ventilation, protection from fire, and other requirements of law cannot be shown in any tabulated form, and yet this constitutes a large part of the work of an inspector of public buildings.

The work on ventilation increases with every year. No school-houses have been built in my district for several years without the provision of some system of ventilation, and during the past year this work has extended to other public buildings more than ever before. Many of the older school buildings have been provided with modern methods of ventilation, and the work is generally satisfactory. Much time, in the cooler months, is devoted to the inspection of ventilation in schools, as this work is now usually guaranteed by contractors to meet the requirements of this department, and committees generally desire to have the approval of the inspector. The orders given by me during the year have been in general cheerfully complied with.

Summary.

Plans received,	78
Changes ordered or recommended,	72
Inspections of buildings made,	264
Written orders given,	33

REPORT OF INSPECTOR HENRY J. BARDWELL.

Class No. 1. District No. 1.

SIR: — I respectfully submit the following brief report of the work performed by me in my district during the past year.

Of the eighty-three plans of new buildings received, forty-nine were for apartment and tenement houses, twenty-three for factories or additions, six for students' dormitories, two for hotels, one business block, one fire station and one police station. Some of the buildings are larger and more costly than most I have heretofore had plans of, and all have required careful supervision of the

work covered by the State laws. The ways of egress have been improved in many of them, additional stairways being placed or outside fire-escapes provided.

There were one hundred and thirty-one inspections of buildings which came under the State laws, and inspections of many others were made which proved not to be covered by statute by reason of there not being a sufficient number of persons lodging above the second story.

Fourteen of the almshouses in the district have been inspected, and in five of them additional ways of egress for use in case of fire have been provided.

The other inspections, classified, are as follows: thirty-four hotels, thirty-one factories, twenty halls, seventeen tenement houses, ten lodging houses and five students' dormitories; and seventy-eight orders were issued for fire-escapes or other better egress, for fire-pails and rope fire-escapes.

Summary.

Plans of new buildings received:—

Apartment and tenement houses,	. . . . .	49
Factories and additions,	. . . . .	23
Students' dormitories,	. . . . .	6
Hotels, . . . . .	. . . . .	2
Fire stations,	. . . . .	1
Police stations,	. . . . .	1
Business blocks,	. . . . .	1
Inspections made,	. . . . .	131
Orders given,	. . . . .	78

REPORT OF INSPECTOR JOSEPH A. MOORE.

Class No. 1. Districts Nos. 2, 3 and 6.

SIR:—I have the honor to submit a report of work performed by me during the past year.

The greater part of the work cannot well be given in tabulated form. Much time has been spent in visiting buildings in process of construction, to see that the work is done in accordance with the plans and specifications filed with the inspector, and that the ways of exit, fire-stopping, heating, ventilation and other parts of the work are properly constructed. Each new building usually requires several visits from the inspector while in process of construction. Inspecting and testing the heating and ventilation of schoolhouses and other public buildings require much of the inspector's time. Consultation with architects, owners, committees, contractors, heating and ventilating engineers, and also the corre-

spondence, which is large, keep an inspector of public buildings fully employed.

Buildings reported by the local authorities as unsafe and dangerous are carefully inspected, and either removed or means devised to make them safe. The inspector is often called upon to exercise good judgment in cases where human life may be in danger if he makes a mistake or error in judgment.

Summary.

Plans received and filed,	73
Recommendations made for changes,	85
Inspections made,	290
Written orders given,	41
Compliances with orders,	37

REPORT OF INSPECTOR EDWIN Y. BROWN.

Class No. 1. District No. 4.

SIR:—I have the honor to submit a summary of the work done by me during the past year.

Summary.

Schoolhouses and additions,	13
Summer amusement buildings,	9
Factory buildings and additions,	5
Apartment houses,	4
Churches,	4
Public libraries,	3
Public halls,	2
Hospitals,	1
Grand Army building,	1
Inspections made,	151
Orders given,	29
Schoolrooms of which the ventilation was tested,	38

REPORT OF INSPECTOR JOSEPH M. DYSON.

Class No. 1. District No. 5.

SIR:—I have the honor to submit herewith my annual report of buildings inspected, where orders were issued; also of plans received and changes recommended.

These reports do not include the many inspections made during the year, and the days spent in working out the plans and specifications, some having to be returned to architects a number of times before being approved by this department, making it necessary to make many visits to both new and old buildings for the purpose of ascertaining that specifications and requirements have been observed and the orders of the inspectors complied with.

There has been considerable decrease in the number of buildings constructed in this district during the past year, with the exception of public schools. These still require the same careful inspection in order to keep up the standard in regard to amount of ventilation, required by your department. But few inspections have been made of so-called dangerous buildings, in all of which the orders and suggestions made have been faithfully carried out without any opposition from the owners of the same.

As to the laws in regard to the employment of labor, but very few complaints have been made, all of which were duly investigated, and the matter either corrected at once, or complaints made at the courts and the parties fined.

Enforcement of the laws in regard to the inspection of buildings, taken as a whole, during the past year has been very satisfactory, and I can see a marked gain from year to year, as the laws are better understood and appreciated by the public.

Summary.

Factories and public buildings inspected,	248
Orders issued,	34
Plans received for erection and construction of buildings,	45
Changes ordered and recommended,	34
Complaints for violation of labor laws,	3
Convictions for violation of labor laws,	3
Unsafe elevators, use thereof prohibited,	3

REPORT OF INSPECTOR JOHN E. FOULDS.

Class No. 1. District No. 6.

SIR:—In compliance with your orders, I have the honor to submit the following report of part of the work performed by me in District No. 6 during the past year, tabulated as far as possible.

In this report it will be noticed that there is quite an increase in the number of new buildings constructed in this district during the past year, both for business purposes and tenement houses.

Quite a number of the plans received during the past year have been for factories and hotels. The laws governing the erection of this class of buildings have reference to quite a variety of details, and it becomes necessary for the inspector to devote a large part of his time, while the building is in course of construction, to see that the provisions of section 25, chapter 481, Acts of 1894, are complied with. To this work I have given my special attention. Under the provisions of section 35 of the above chapter and act I have carefully inspected a large number of hotels, factories, boarding and tenement houses in this district; and where such buildings

have not already been provided with sufficient means of egress or means of extinguishing fire, I have issued the necessary orders. In most cases they have been promptly complied with. Those that have not been complied with are mostly in summer hotels, and the orders will be complied with before opening for the season of 1903.

During the past year I have visited the different theatres and places of assemblage in this district, and am pleased to say that I have had no complaints as to seats being placed in aisles, or of overcrowding; and believe the managers in general are complying with the provisions of section 24, chapter 481, Acts of 1894. Relative to the enforcement of the provisions of section 219, chapter 394, Acts of 1898, I have found it necessary to call the managers' attention to the fact that children have in some cases appeared on the stage in violation of the law, and I have had said children removed from the stage.

In conclusion, would say that most of the orders issued by me have been promptly and cheerfully complied with.

Summary.

Inspections of new buildings,	. . . . .	80
Changes recommended,	. . . . .	43
Old buildings inspected,	. . . . .	215
Orders issued,	. . . . .	138

REPORT OF INSPECTOR WARREN S. BUXTON.

Class No. 1. District No. 7.

SIR:—An annual report seems at times a tedious affair, a repetition of facts which seem very much alike from year to year; yet there are differences, even in the sameness, which tell to the experienced eye whether progress has been made in thoroughness and attention to details. This year, as in previous years, much time has been spent in an advisory way with committees and people who are for the first time erecting buildings which come under the law. With these it is needful to explain the law and give them the reasons for the requirements. This part of my duty is more satisfactory than in the early days, when the newness prejudiced conservative people against the law, and it sometimes required very impressive arguments to make them willing to comply with the requirements. It is these people who are building for the first time in their lives who cause trouble and delay, by not filing the plans with the inspector before the building is contracted for, the excuse invariably being that they did not know it was necessary to do so.

The erection of apartment houses, or flats, as they are usually called, has become quite a feature in my district. All these buildings have been made slow-burning, while some of the larger ones have been constructed of fire-proof material.

I am happy to report a steady improvement from year to year as to material and construction of all buildings which come under the provisions of the law, and this improvement is extending to the building of private dwellings as well. As people come to understand the many benefits to be derived from putting in properly constructed fire-stops in all partitions and outer walls, around water, steam, soil and gas pipes, that it makes all structures not only slow-burning, but prevents vermin of all kinds from infesting the building, they are very willing to pay the small additional outlay required to furnish them.

We have examined about the usual number of old buildings that had been previously inspected and provided with outside stairways. As in previous years, these stairways and landings have sometimes been found laden with household stuff or made into miniature flower gardens, rendering them unfit for use in case of fire. The people, on being made to understand they were breaking the law and liable to a fine, and endangering their own lives, very gladly cleared them of all obstructions.

There are now in process of construction in this district school buildings with class rooms sufficient for the accommodation of some three hundred pupils. These buildings are to be furnished with the best modern appliances for ventilation, escape in case of fire or panic, and sanitary provisions. Two of the older school buildings in this district have been provided with new and improved heating and ventilating appliances; one of these, the high school building of Westfield, has now a double mechanical system, and when completed will no doubt be one of the best-ventilated school buildings in this district.

During the year we have been called upon to examine a few buildings that were supposed to be unsafe. In all these cases the structures have been strengthened, or taken down and new ones erected in their places.

The progress in proper ventilation in public buildings, especially in school buildings, has been very satisfactory since the laws requiring such improvements were enacted, fifteen years ago. No one can realize this better than the inspector, who has watched it from the beginning; and no one appreciates these changes more than the teachers, who never tire of expressing their personal gratitude for the benefits derived from the change.

Summary.

Plans for new buildings received,	50
Old buildings inspected,	110
Orders given for rope fire-escapes and better means of egress,	14

REPORT OF INSPECTOR ANSEL J. CHENEY.

Class No. I. District No. 8.

SIR: — I have the honor to report as follows the work performed by me in District No. 8.

As my duties place upon me the care and responsibility of providing proper egress and fire-stopping of all new buildings coming under the head of hotels, boarding and lodging houses, work shops, mercantile establishments and factories having ten or more people above the second floor, as well as providing all old buildings coming under that head with proper ways of egress or other means of escape from fire, and providing proper sanitary arrangements and means of ventilation in such places ; the providing of hotels and boarding houses containing fifty or more rooms and being three or more stories in height with watchman, portable fire-escapes in sleeping rooms, means for extinguishing fire, notices describing the ways of egress in every sleeping room, proper fire-alarm gongs and keeping them in working order, red lights at the head and foot of every flight of stairs by night, and other things which I will not attempt to enumerate, — it will be seen at a glance that there is enough work to do to keep a man busy, to say nothing of the plans of old buildings that we are expected to make in our leisure moments.

During the past year plans for over fifty buildings have been deposited with me for examination and approval. A large number of these have been tenement or apartment houses ; and probably more than one-half million dollars have been invested in the factories that have been built in my district and half as much more in tenement houses and hotels. While a great deal of my time has been taken up with new buildings, about two hundred and twenty-five old ones have been inspected and fifty or more orders sent ; many minor matters, being attended to at the time of inspection, required no written order.

I find that not much attention is given to fire-escapes, after they are once provided, by the owners or agents of the buildings ; and in several cases the past year I have been obliged to order repairs made on them. When I called their attention to the unsafe condition of the old fire-escape, they told me that they paid very little

attention to these matters, as they expected the inspector to look out for such things. This may seem all right to them, but, with all the new buildings that call for his attention, it would not be surprising if some of the fire-escapes and their condition escaped his notice. Thus far we have had no serious accidents or mishaps.

The inspection of the construction of new buildings occupies a great deal of time; and the buildings in my district being largely tenement houses and factories, the care and responsibility is great, the factories containing a mass of people by day and the tenement houses by night. However, I have tried to attend to all to the best of my ability and understanding.

It is gratifying to hear the pleasant comment of approval of our laws in relation to the protection of guests in hotels. In the performance of my duty among the summer hotels in my district I come in contact with many people from other States, and, in visiting the rooms to see if everything is provided that the law requires, the guests often ask me to explain the use of the portable fire-escapes which they find there. After explaining how to use them, and that they are required by law to be there, they often remark that such a law is a wise provision; why is it not required in all States? The value of fire gongs in hotels to alarm the guests in case of fire cannot be too highly appreciated; and I can testify to their practicability and worth, for when testing them, it being a part of my duty to see that they are all in order, we usually notify the guests that we are about to do so; but if there is a room that has been neglected or a guest that has failed to receive the notice, at the first click of the gongs they are out of their rooms to find out if the house is on fire. It never fails to remind them that the strike of the fire gong means a warning that they can ill afford to ignore.

I have made it a rule for several years not to approve a plan for a factory more than three stories high unless at least one of the two or more stairways were made fire-proof, so far as the well in which it was constructed was concerned, and, if many people were to be employed, both of them. The stairs being as far apart as circumstances would allow, would seem to eliminate the danger of any one being cut off in case of fire. The amount of fire-stopping necessary or that can be introduced into a factory constructed on the plan known as "mill construction" is rather limited, as the nature of construction is to cut off all places where fire could work up through; but, in order to provide all the protection possible, these fire-proof stairways are insisted upon.

Tenement houses are given that attention in their construction as will best protect the occupants in case of fire. All channels,

flues and pockets are fire-stopped with brick and mortar, and the spaces around the chimneys closed by building into the joints of the chimney, on a level with the under floor, a piece of sheet-iron about six inches wide and long enough to lap on the corners. This is set into the brick work about two inches, and, lapping over the under floor, makes a complete cut-off. In tenement houses the danger of fire from the chimneys is probably greater, barring accidents, than any other; and around chimneys as formerly constructed there was an open space required by law of one inch from any woodwork. This made an excellent place for a fire to go up through the building, if it occurred from the chimney; but by the introduction of this plan, to prevent draft, a fire occurring around the chimney has got to burn through the floor before it can get into the room above.

I found a flagrant violation of the law requiring watchmen to be kept in hotels, also not having notices posted describing the ways of egress in sleeping rooms. I made a complaint and the proprietor was summoned into court and found guilty; he paid a fine of fifty dollars on one account and twenty-five on the other.

My associate, Inspector Sheehan, who has charge of the factories in my district, has been instructed to notify me of any place coming under his observation where the egress is poor or obstructed. He has called my attention to several places where it was obstructed, and I have had them attended to.

In conclusion, I wish to say that those with whom I have come in contact in the performance of my duty have treated me with great respect and consideration, and have expressed a willingness to do whatever in my judgment was proper and right.

Summary.

Plans received :—

Hotels,	6
Mercantile and office buildings,	2
Lodging houses,	2
Tenement houses,	35
Factories,	8

Recommendations :—

Fire-stopping,	27
Additional fire-stopping,	7
Additional egress,	10
Fire walls,	10
Smoke-stops in corridor,	1
Buildings inspected,	225
Orders issued,	51
Orders complied with,	48

REPORT OF INSPECTOR HENRY SPLAINE.

Class No. I. District No. 9.

SIR:—I respectfully submit herewith a tabulated report of the buildings inspected by me during the past year, including plans of new buildings either finished or in course of construction, and of certificates issued to owners or their agents of new buildings, who have complied with the requirements of existing building laws. My inspections have had to do with the older buildings, such as hotels, apartment houses, boarding houses, factories, dormitories and others, for the purpose of ascertaining whether there is continued in them ample means of egress in case of fire, and that apparatus for extinguishing fire is properly provided and always ready for use.

My examinations of plans and subsequent observations of the new buildings during construction have been made for the purpose of securing for the buildings all that had been stipulated in the plans. Many orders have been issued and suggestions offered to owners of buildings during the year, all of which have been respectfully received and complied with.

Most satisfactory results have come as a reward of patient and persistent watchfulness, which warrant me in believing that all the completed buildings in my district of the classes above described are in a condition to enable their occupants to escape unharmed in case of fire.

Summary.

Regular inspections of buildings,	. . . . .	156
Plans received:—		
Apartment houses,	. . . . .	10
Factories,	. . . . .	3
Hotels,	. . . . .	1
Dormitories,	. . . . .	1
Certificates issued,	. . . . .	54
Orders and requests,	. . . . .	75
Visits, independent of inspections,	. . . . .	184

REPORT OF INSPECTOR FREDERICK W. MERRIAM.

Class No. I. District No. 10.

SIR:—I have the honor to submit the following report of the work performed by me during the past year, tabulated in part, in usual form.

The number of plans filed for new buildings is about the same as in years previous, but they have been largely for business and

manufacturing purposes, and have been of a good class of construction.

Of the existing buildings visited, several have undergone quite extensive changes and have consumed considerable time in detail work. Among these are the Hoosac Street School of Adams, which has been provided with a modern mechanical system of ventilation (the old Smead system being abandoned) and approved sanitary fixtures; and the Academy of Music of Pittsfield, which has had its emergency egresses renewed and improved.

The usual amount of time has been given to the testing of heating and ventilating systems of public and school buildings, supervising new construction, and consultation with architects, owners, committees and others.

Summary.

Plans of buildings filed,	. . . . .	20
Changes recommended and adopted,	. . . . .	15
Buildings inspected,	. . . . .	44
Orders issued and complied with,	. . . . .	15
Special reports on changes adopted,	. . . . .	11

FACTORY INSPECTION DEPARTMENT.

REPORT OF INSPECTOR CHARLES E. BURFITT.

District No. 1.

SIR: — I have the honor to submit my tabulated report of District No. 1, ending Oct. 20, 1902.

You will find each city and town separately reported as to numbers of inspections made and orders given in factories and workshops. I would say, in addition, that the general condition of factories is good and healthful, and few complaints are received as to sanitary conditions.

As to the guarding of machinery, we always find more or less in this line, as changes are continually being made. There is one point in this connection I will speak of, as it is generally neglected; and that is, governors on small steam engines, which are not usually automatic, and in case the belt that drives the governor breaks, the engine will race, and endanger the lives of the operatives. I have ordered several of these automatic governors placed on engines, with good results, the owners expressing themselves well pleased with the change. Where the automatic governor is used, the engine will stop if belt breaks. There are several kinds of automatic governors in use, all answering the desired purpose. The reason I speak of this is from the fact of an engineer having

been killed in my district by the bursting of the fly wheel, caused by the engine racing.

I have found elevators generally in good condition, but with the same trouble that I have spoken of before, in regard to safety devices. Safety devices that depend upon the slackening of the hoisting rope are in my opinion not safe, as accidents happening to the machinery cause the hoisting rope to remain taut, and prevent this kind of safety device from working, whereupon the elevator will fall, causing damage to life and limb. There have been devices invented that work independently of the hoisting rope, but the expense is so great that they have not been in general use.

Summary.

CITIES AND TOWNS.	Inspections.	Males employed.	Females employed.	CHILDREN BETWEEN 14 AND 16 YEARS.		Elevators inspected.	Orders given and complied with.
				Males.	Females.		
Acton, .	4	92	17	-	-	3	-
Ayer, .	11	294	36	8	-	4	6
Ashley, .	2	14	-	-	-	-	-
Arlington, .	8	184	40	-	-	3	6
Belmont, .	3	97	5	-	-	1	-
Burlington, .	1	13	-	-	-	-	-
Cambridge, .	184	10,412	4,449	111	126	150	105
Concord, .	4	233	37	2	-	2	10
Everett, .	30	1,855	288	16	13	9	20
Groton, .	4	96	15	-	-	1	4
Hudson, .	12	1,149	544	23	27	12	7
Littleton, .	4	75	58	-	-	2	5
Lexington, .	5	42	40	-	-	-	2
Melrose, .	13	690	656	17	-	8	10
Medford, .	15	493	60	18	-	5	10
Malden, .	51	1,702	1,454	11	17	29	44
Maynard, .	2	1,036	427	17	10	10	3
Pepperell, .	6	597	148	6	5	13	6
North Reading, .	3	23	-	-	-	-	1
Reading, .	18	416	219	6	1	3	12
Sudbury, .	1	16	-	-	-	-	-
Shirley, .	4	255	192	13	23	3	1
Stow, .	1	59	20	3	1	-	2
Stoneham, .	14	935	492	20	7	12	12
Somerville, .	56	2,637	441	56	25	30	37
Townsend, .	5	110	-	-	-	1	-
Woburn, .	35	1,291	214	8	1	28	41
Winchester, .	11	1,119	111	21	-	6	12
Waltham, .	19	2,965	2,418	31	21	16	26
Weston, .	3	86	-	-	-	-	3
Wayland, .	3	371	59	3	-	3	3
Wakefield, .	18	873	408	12	23	21	14
Wilmington, .	1	26	-	-	-	1	4
Totals, .	551	30,246	12,857	402	300	376	406

REPORT OF INSPECTOR JOSEPH HALSTRICK.

District No. 2.

SIR:—I herewith submit the following tabulated report, including only the factories to which orders have been issued; and the summary, which includes the number of inspections made in each

city and town in the district, and the number of persons therein employed.

I am pleased to state that the district assigned me during the past fourteen years has been thoroughly inspected, and the requirements of the factory laws (including mercantile establishments) have been promptly complied with; the good results achieved are certainly manifest.

Summary.

Inspections,	953
Orders issued,	356
Elevators inspected,	78
Children between fourteen and sixteen years of age employed,	920
Males employed,	32,071
Females employed,	17,658
Total employed,	50,649

Number of inspections in each city or town :—

Boston,	801	Milford,	33
Ashland,	3	Medway,	9
Bellingham,	2	Millis,	6
Franklin,	16	Mendon,	1
Framingham,	14	Natick,	24
Hopkinton,	2	Needham,	10
Holliston,	1	Southborough,	1
Hopedale,	1	Wellesley,	3
Marlborough,	26		

REPORT OF INSPECTOR ARRON S. ATHERTON.

District No. 3.

SIR :— I transmit herewith a tabulated statement of my work in District No. 3, for the year past.

As an inspector's duties in this department are necessarily varied, a report can contain but a small portion of the work actually performed ; in fact, an inspector's work is never done, even to making it satisfactory to himself.

I find a general willingness to comply with all orders of the inspector, and in the few cases where in my report orders given are not marked complied, they are in process of completion.

I find, in the investigation of complaints for overtime work, that in a majority of cases it is through a misunderstanding of the law, and that the employees are equally to blame with the employers, in that they are anxious to work overtime, they to receive extra pay for the same.

Summary.

Inspections in mercantile establishments,	210
Orders given in factories and workshops,	670
Males employed in factories and workshops,	14,899
Females employed in factories and workshops,	8,051
Children employed between fourteen and sixteen years of age,	404
Total employed in factories and workshops,	22,950
Number of elevators inspected,	28

Number of inspections in each city or town : —

Boston,	759	Newton,	20
Brookline,	10	Watertown,	25

REPORT OF INSPECTOR MALCOLM SILLARS.

District No. 4.

SIR : — I herewith submit a full report of the work done in this district during the year.

Of the 587 inspections of factories and workshops made, I found it necessary to give the following orders : sanitaries, 54 ; school certificates for minors, 97 ; time tables, 190 ; general orders, mostly for guarding of machinery, 189 ; orders for illiterate minors to attend evening school, 10. I found four children under fourteen years of age at work, and, on calling the attention of the firm to the law, the children were discharged. There were no complaints received as to the heating of street railroad cars, and but one complaint as to violation of the law relating to the weekly payment of wages. The law regulating the hours of labor of women and minors in mercantile establishments has taken considerable time, and I find each year that new time tables are required to be posted, as they become soiled, and in cleaning up very often they are torn down.

I have inspected 46 elevators in my district outside of Boston. They were generally found in good condition. The elevators in Boston, East Boston and Charlestown, and the means of egress from factories, are by law placed under the building inspector of Boston. There have been five fatal accidents in my district since my last report, all in Boston : two caused by falling down elevator well ; one by elevator crushing him in the pit ; one by trying to get on an elevator while in motion ; and one man killed by being caught in belt in grain elevator.

There is a gratifying improvement in the condition of the water-closets in factories and workshops. They were generally found in good condition, clean and well ventilated. In the matter of egress from factories I have found several that were in bad condition, and those I have reported to the proper parties.

Summary.

	Boston.	East Boston.	Charlestown.	Chelsea.	Revere.	Winthrop.	Totals.
Inspections,	325	83	79	83	6	1	587
Orders given,	-	-	-	-	-	-	540
Males employed,	5,266	2,141	2,322	3,480	177	6	13,392
Females employed,	3,554	199	594	1,409	41	6	5,803
Boys employed under sixteen years of age.	105	2	17	64	-	-	188
Girls employed under sixteen years of age.	60	3	11	37	1	-	111
Total employed,	8,985	2,345	2,944	4,990	219	12	19,494
Elevators inspected,	-	-	-	43	3	-	46

REPORT OF INSPECTOR LEWIS F. F. ABBOTT.

District No. 5.

SIR:—I forward you a brief statement, as ordered, relating to the operation of the labor and industrial laws, which are very well complied with in this district.

Complaints have been very few, and all have been investigated; some of them have been found groundless, but when the complaint has been found to be true, the cause for such complaint has been stopped, or the violators proceeded against in court.

In relation to the condition of the elevators, I have inspected all except in the towns of Ashburnham, Clinton and Warren, which have been inspected by other officers, and report made to headquarters. In my inspection, if at any time the elevators appear in my judgment to be in a safe condition, they are so reported; if some small adjustment is all that is needed, and it can be done at the time, so as to be made safe, it is done; when there is work like putting on a new cable, it is ordered attended to without delay. Elevators are a constant source of anxiety to me, as they are liable to get out of order at any time, generally through ignorance or carelessness on the part of those using them.

Summary.

CITIES AND TOWNS.	Inspections.	Males employed.	Females employed.	Children between 14 and 16 Years.
Athol,	22	1,097	388	14
Auburn,	3	81	68	5
Brookfield,	8	427	154	16
Charlton,	4	146	68	-
Dana,	4	74	92	-
Dudley,	6	790	642	109
Fitchburg,	53	3,448	2,218	229
Gardner,	24	2,474	596	38
Grafton,	7	525	496	80
Holden,	9	363	201	8
Hubbardston,	3	42	12	1
Leicester,	14	494	239	6
Leominster,	50	2,677	1,514	25
Millbury,	15	724	265	22
Northbridge,	6	2,550	622	109
Northborough,	5	193	76	4
North Brookfield,	3	146	69	-
Oxford,	8	232	166	11
Royalston,	2	62	6	-
Sturbridge,	3	230	179	36
Southbridge,	12	1,815	680	170
Spencer,	10	764	412	16
Templeton,	12	606	50	2
West Brookfield,	2	94	161	3
Webster,	10	1,637	875	98
Westborough,	9	295	253	-
Winchendon,	16	1,016	354	30
Worcester,	218	17,697	7,189	253
Totals,	538	40,608	17,925	1,285

Factories inspected, . . . . .	. . . . .	538
Mercantile establishments inspected, . . . . .	. . . . .	106
Buildings, hotels, halls and theatres inspected, . . . . .	. . . . .	98
Elevators with cable lift inspected and tested, . . . . .	. . . . .	183
Elevators, hydraulic plunger, no test, . . . . .	. . . . .	62
Orders issued, . . . . .	. . . . .	60
Employees in factories:—		
Males over sixteen years of age, . . . . .	. . . . .	40,608
Females over sixteen years of age, . . . . .	. . . . .	17,925
Children between fourteen and sixteen years of age, .	1,285	
Total employed, . . . . .	. . . . .	59,818

REPORT OF INSPECTOR JOHN F. TIERNEY.

District No. 6.

SIR: — The following report is respectfully submitted as to the condition of District No. 6, of which I am one of the inspectors.

In presenting my annual report, I am pleased to be able to say that the factories and workshops in this district are very much improved since my last report, as regards the running time, sanitary and school laws. The latter law is well obeyed by the super-

intendents and overseers, and a great many are adopting the rule of hiring older children than formerly, they say with better results.

The elevators in my district I have found or have had placed in good condition as regards safety devices, new ropes and gears; and there is not now to my knowledge one in my district that is not supplied with some form of safety device, or is in process of being supplied. Not an accident, as far as I am aware, has occurred during the year from the giving way of rope or gear. I am convinced that the great decrease in the percentage of accidents from the number occurring in former years is caused in a great measure by the employment of better hoisting machinery, more frequent replacement of ropes and better understanding of the dangers attending careless running. In regard to the guarding of elevator wells, none are without some provision. In all cases where there is a large number of employees, especially where women and children are employed, where the openings were not so supplied, I have ordered self-closing hatches or automatic gates; and in all cases where I have found an evident carelessness or neglect to keep other guards in position, I have followed the same course.

Summary.

Inspections made,	1,026
Orders issued,	400
Orders complied with,	400
Children employed between fourteen and sixteen years of age,	4,000
Males employed,	40,000
Females employed,	35,500
Elevators inspected,	400

Number of inspections in each city or town :—

Fall River,	350	South Swansea,	3
New Bedford,	200	Swansea,	8
Taunton,	75	Provincetown,	8
Attleborough,	100	Norton,	6
North Attleborough,	90	Chartley,	11
Attleborough Falls,	35	Assonet,	9
South Attleborough,	15	Fairhaven,	10
North Dighton,	4	Orleans,	5
Raynham,	4	Westport Factory,	12
Mansfield,	25	Sandwich,	10
South Easton,	6	Hebronville,	8
North Easton,	9	Dodgeville,	9
Adamsdale,	6	Nantucket,	4
Somerset,	4		

REPORT OF INSPECTOR JAMES R. HOWES.

District No. 7.

SIR:— In connection with the tabulated reports, I submit the following report in reference to the work placed in my hands.

I am glad to state that the decrease in the number of minors employed who are under sixteen years of age is the largest of any year in the last decade. I am also glad to report that employers have received chapter 186 of the Acts of 1902 with a great deal of satisfaction.

Many of the elevators in this district are so well constructed that very little attention is required to keep them in a good and safe condition. On the other hand, the elevators in paper and print works require constant attention, due to the corrosive action of the chlorides and dyes upon the cables and springs. Some fatal accidents have occurred on elevators during the past year, but in no case has a defect in the elevator or in the safety appliances been the cause.

To keep the machinery properly guarded requires constant attention. When belts, gears, shafting and drums are changed, I find that proper guards in many cases are not replaced, and I am constantly giving orders for their replacement.

Summary.

Inspections made,	716
Orders issued,	180
Compliances,	180
Males employed,	22,521
Females employed,	13,482
Minors employed between fourteen and sixteen years of age,	1,298
Total males and females employed,	36,003
Elevators inspected,	162
Orders given on elevators,	31

Number of inspections in each city or town:—

Springfield,	180	Holyoke,	210
Northampton,	68	Westfield,	65
Easthampton,	30	Amherst,	21
Monson,	12	Cummington,	6
Goshen,	3	Hampden,	4
Westhampton,	2	Palmer,	30
Huntington,	6	Chicopee,	39
Ludlow,	12	Agawam,	4
Granville,	2	Enfield,	8
Russell,	4	Hatfield,	6
Southampton,	4		

REPORT OF INSPECTOR EDWARD B. PUTNAM.

District No. 8.

SIR:—Herewith I transmit a tabulated report and summary of work done in District No. 8 for the past year.

The laws which are entrusted to the factory inspectors of the Massachusetts District Police to enforce are well complied with in this district, and it is certain that a very large majority of manufacturers are not only willing but anxious to avoid giving the inspector occasion to issue any orders. Of course changes are being made, machinery relocated, new shafting and gearing put up and new machinery installed. With alterations in and additions to factories, and with new factories being built, it is not to be supposed that everything will be left to the entire satisfaction of the inspector, hence more or less orders are issued every year.

Elevators in the district are in good condition, generally speaking, none having had to be placarded during the year. Hoisting cables and safety devices are closely looked after, hoisting gear and sheave wheels tested; but, after all, the safest safety device, as Inspector Sheehan said in his report to you some three years ago, is a multiplicity of hoisting cables.

Summary.

CITIES AND TOWNS.	Inspections.	Males employed	Females employed.	Children under 16 Years.	Elevators Inspected.	Orders issued.	Visits outside of Inspections.
Abington,	15	1,401	453	16	9	9	13
Avon,	2	120	44	3	-	1	-
Braintree,	8	566	198	11	2	2	-
Bridgewater,	6	727	186	30	2	3	5
East Bridgewater,	2	273	5	-	2	-	-
Brockton,	152	13,098	4,562	166	73	77	85
Blackstone,	5	986	302	54	1	6	2
Canton,	4	350	185	1	-	1	1
Dedham,	5	441	263	10	2	-	1
Foxborough,	5	125	197	-	2	1	3
Hanover,	3	135	10	-	-	2	-
Holbrook,	3	106	36	-	1	5	-
Hull,	19	378	313	-	-	14	12
Hanson,	2	58	-	-	-	2	-

Summary — Concluded.

CITIES AND TOWNS.	Inspections.	Males employed.	Females employed.	Children under 16 Years.	Elevators inspected.	Orders issued.	Visits outside of Inspections.
Hyde Park,	25	1,798	731	28	8	10	7
Kingston,	6	40	19	-	-	4	-
Medfield,	5	308	321	-	1	2	1
Middleborough,	15	1,016	265	-	8	6	-
Norwood,	9	1,650	319	2	7	-	1
Plymouth,	11	1,557	412	86	8	4	5
Quincy,	16	2,178	541	7	5	10	6
Randolph,	5	280	92	2	4	3	2
Rockland,	19	1,079	450	22	9	14	6
Stoughton,	11	812	398	43	5	4	9
Upton,	3	350	600	-	1	-	1
Walpole,	10	698	89	9	3	6	3
Wareham,	1	210	-	-	-	-	-
Weymouth,	15	1,101	627	9	10	10	3
Whitman,	10	1,569	595	19	8	8	3
Wrentham,	7	458	196	-	1	-	-
Totals,	399	33,868	12,399	518	172	204	169

REPORT OF INSPECTOR JOHN J. SHEEHAN.

District No. 9.

SIR : — I respectfully submit my annual tabulated report of the inspection work performed in District No. 9, and a short review of the same.

The law in relation to the employment of minors is generally observed, although it is hard to make the people understand that a child cannot work during the vacation months without a certificate kept on file. This does not apply to the large factories and mills, but to small workshops and mercantile stores. I was obliged to summon the parents of a minor into court for giving the firm a false statement of his age, and they were found guilty, and, after being severely lectured by the judge, the case was placed on file.

I have visited about 200 mercantile stores, and found the time tables posted. I have received but very few complaints, and when I investigated them I found that the girls who made the complaints through their friends were not willing to admit that they were

worked over fifty-eight hours, but that they wanted the hours arranged to suit them, and not the people they worked for ; and that I have no power to do.

A large part of the time is taken up in inspecting elevators and machinery. The invention of improved machinery is fast doing away with all work that was formerly done by hand, and consequently the factories and workshops are filled with machinery operated by power. In a great many instances the persons employed to operate the machines receive but little instruction ; and, while I believe that a greater number of the accidents occur on account of carelessness, I think that more care could be taken when men are hired and placed in charge of the machines. Everything in the way of safeguards is provided that can be utilized without interfering with the manufacturing process.

The hoisting machinery and cables of elevators receive all the attention possible, and, considering the manner in which a great number of the freight elevators are operated, it is a wonder that there are not a larger number of accidents. I must say that from observation the people employed in factories take more chances of injury in operating elevators simply because they do not know how to operate them. If the employers were obliged to have an experienced man in charge, there would be more safety.

The sanitary conditions in the factories and workshops are constantly improving every year, and when the plans of new buildings are submitted, the attention of the builder is called to the fact that they must provide a sufficient number of proper closets for both sexes, and that the best time to do it is when they are building.

The weekly payment law has been generally complied with, and I have not received any complaints.

In conclusion, I am pleased to say that a cordial reception has been given the inspector, and the employers of help and the owners of buildings have cheerfully complied with all orders and suggestions.

Summary.

Mercantile establishments visited,	. . . . .	200
Factories and workshops inspected,	. . . . .	879
Elevators inspected,	. . . . .	400
Orders issued,	. . . . .	226
Compliances,	. . . . .	226
Total persons employed,	. . . . .	64,193
Total males employed,	. . . . .	44,379
Total females employed,	. . . . .	19,814
Male minors between fourteen and sixteen years of age,	. .	477
Female minors between fourteen and sixteen years of age,	. .	243
Buildings with poor egress reported to Inspector Cheney,	. .	7

Summary Concluded.

CITIES AND TOWNS.	Inspections.	Males employed.	Females employed.	CHILDREN BETWEEN 14 AND 16 YEARS.	
				Males.	Females.
Amesbury,	40	1,750	500	15	17
Beverly,	39	1,650	655	12	1
Bradford,	5	300	125	5	-
Danvers,	17	650	175	2	-
Georgetown,	4	170	10	-	-
Groveland,	3	275	175	18	8
Gloucester,	35	950	705	17	10
Haverhill,	197	8,260	4,090	39	11
Ipswich,	4	400	450	28	22
Lynn,	305	16,200	7,405	142	70
Marblehead,	20	525	325	-	-
Manchester,	5	65	10	-	-
Merrimac,	7	216	1	-	-
Newburyport,	38	2,865	1,750	67	29
Newbury,	2	100	35	2	-
West Newbury,	2	75	15	-	-
Peabody,	50	2,750	400	25	3
Rockport,	4	2,085	-	-	-
Rowley,	8	215	40	4	-
Salem,	83	4,718	2,878	101	75
Saugus,	4	60	25	-	-
Swampscott,	2	40	20	-	-
Topsfield,	5	60	25	-	-
Totals,	879	44,379	19,814	477	243

REPORT OF INSPECTOR CHARLES A. DAM.

District No. 10.

SIR:—I herewith respectfully submit a report of inspections made, also a summary of work performed in District No. 10, during the year.

Inspections of mercantile establishments are not included in tabulated or summary report; many visits are made of which no record appears. The condition of the district is good; few accidents have occurred, and general satisfaction is apparent. All employers desire to conform to the law.

Summary.

Inspections,	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	512
Orders issued,	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	162
Compliances,	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	162
Children between fourteen and sixteen years of age,	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	1,274
Males employed,	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	16,486
Females employed,	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	8,309
Total employed,	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	24,745
Elevators inspected and tested,	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	269

CITIES AND TOWNS.	Inspec-tions.	Males employed.	Females employed.	Children between 14 and 16 Years.	Ele-vators.
Adams,	30	2,178	1,738	439	28
Ashfield,	6	23	4	-	-
Becket,	7	60	25	8	1
Bernardston,	4	36	-	2	-
Buckland,	11	260	34	10	7
Charlemont,	6	44	-	1	-
Cheshire,	6	98	-	-	-
Clarksburg,	3	168	84	10	1
Colrain,	9	209	66	18	4
Conway,	13	97	60	11	2
Dalton,	23	410	485	23	14
Deerfield,	3	50	102	-	-
Erving,	14	359	25	11	4
Egremont,	1	47	-	-	1
Gill,	2	94	-	-	-
Great Barrington,	25	746	511	17	13
Greenfield,	51	946	230	51	19
Hinsdale,	7	193	117	7	-
Lanesborough,	1	7	-	-	-
Lee,	18	364	230	3	9
Lenox,	4	64	54	-	5
Montague,	21	982	391	62	21
Monterey,	3	8	2	-	-
Northfield,	3	7	2	-	-
North Adams,	84	4,421	2,005	354	66
Orange,	35	1,046	204	17	13
Otis,	2	5	-	-	-
Plattsfield,	68	2,949	1,719	185	55

Summary — Concluded.

CITIES AND TOWNS.	Inspec-tions.	Males employed.	Females employed.	Children between 14 and 16 Years.	Elevators.
Richmond,	6	111	-	-	-
Savoy,	4	11	2	-	-
Sheffield,	2	22	2	-	-
Shelburne,	13	68	29	8	1
Stockbridge,	1	5	15	-	1
Tyringham,	4	19	-	-	-
Wendell,	5	42	33	3	-
Windsor,	3	15	-	-	-
Williamstown,	14	272	140	34	4
Totals,	512	16,436	8,309	1,274	269

REPORT OF INSPECTOR FRANK C. WASLEY.

District No. 11.

SIR: — I most respectfully submit to you my annual tabulated report and summary of work performed by me in District No. 11 for the past year.

Nearly all the manufacturing establishments in this district at the present time are, I am pleased to say, in a very flourishing condition. I have had very few complaints the past year of violations of the fifty-eight-hour law, and those that I have had have been from the mercantile establishments.

With a continuous changing and rearranging of machinery in the different plants, I have had occasion to visit many several times, as I find they are apt to leave some of the machinery unguarded when such alterations become necessary.

Theatres and all places of amusement are carefully looked after in regard to crowding the aisles or preventing free egress to and from all doors connected with these buildings. But when the polo games were being played last winter I had considerable trouble with some of the halls in getting exits cleared, and posting police officers to clear the entrances in case of accident, as these halls are very much crowded at these games. I shall look after this business carefully this winter.

All orders that I have issued have been promptly and fully complied with by the agents and managers of the different manufacturers, and I am pleased to inform you that I consider this district

in good condition, as all labor laws are generally obeyed and complied with.

Summary.

Inspections,	516
Orders issued,	308
Compliancees,	308
Males employed,	39,215
Females employed,	26,877
Children employed between fourteen and sixteen years of age,	4,638
Total males and females employed,	66,092
Elevators inspected,	264

	Inspections.	Males employed.	Females employed.	CHILDREN BETWEEN 14 AND 16.	
				Males.	Females.
Lowell,	342	20,513	14,927	959	734
Lawrence,	100	13,634	9,474	1,420	1,115
Andover,	8	593	338	44	42
North Andover,	8	1,264	261	31	27
Chelmsford,	16	568	400	36	74
Billerica,	9	410	259	4	5
Methuen,	13	611	584	34	21
Dracut,	6	827	201	7	11
Tyngsborough,	3	61	-	1	-
Tewksbury,	1	14	-	-	-
Westford,	10	720	427	31	42
Totals,	516	39,215	26,877	2,567	2,071

REPORT OF INSPECTRESS MARY A. NASON.

Special Duty.

SIR:—In compliance with your request, I herewith submit my fifth annual report.

It is with considerable satisfaction that I review the work of the past year, for I know that in very many cases my visit was the means of decreasing the hours of labor of the women and minors, and bringing about other changes which added to their convenience and well-being. The changes wrought by the law making fifty-eight hours per week the limit for women and minors in mercantile establishments, while seeming to work an injury to some, will, I believe, adjust themselves so that the law will become the blessing it was intended to be.

I have before mentioned the fact that there is a constant decrease in the number of children under sixteen years of age employed, and this year has been no exception; in fact, merchants themselves assert that it is almost impossible to procure all they need,—a fact which it seems to me is a cause for congratulation.

Each year I find the people understanding and appreciating better and better those laws which tend to lighten their burdens and bring employers and employees into more kindly relations, thereby rendering their enforcement less difficult.

On the whole, I feel that we can think of the past without regret, and look to the future with hopefulness for greater and better things than we have ever yet achieved.

Summary.

Inspections,	991
Orders issued,	78
Compliances,	77
Children employed between fourteen and sixteen years of age,	837
Males (adnlts) employed,	8,194
Females (adults) employed,	17,252

Number of inspections in each city or town :—

Athol,	10	Lowell,	76
Boston,	532	Salem,	35
Fitchburg,	32	Springfield,	24
Haverhill,	35	South Boston,	32
Holyoke,	17	Worcester,	45
Lawrence,	72	Woburn,	6
Lynn,	52	Waltham,	23

REPORT OF INSPECTRESS MARY E. HALLEY.

Special Duty.

SIR:—In compliance with your request for a written statement of the work performed by me for the year ending Oct. 20, 1902, I will give a brief outline of the laws given me for enforcement.

The act requiring specifications to be furnished to persons employed in cotton, worsted and woollen factories, of which I have special charge, has not been the source of so many complaints as formerly. This work consists in examining cloth as to length, weight, reed, pick and price, and to see that the prices are posted for all piece work, as carding, spooling, warping and web drawing. As this work does not appear in the regular tabulated form, it is difficult to give any accurate idea of the amount of time or nature of the work performed in this special branch. Many hours are

spent in measuring and weighing cloth, counting picks, reed, etc., to determine whether the cloth is woven in compliance with the specifications posted. It also requires keeping on file the different styles and various lengths examined for reference. In order to correctly secure a fair estimate, many cuts on one particular style are examined, in order to ascertain whether the five per cent. limit fixed by law is not exceeded; that is to say, that the maximum length of a cut or piece does not exceed five per cent. of the intended length of the same. Only in very few mills, as can be seen by reports kept on file, are orders given "not to exceed maximum length." I have had cases reported for investigation stating that "cuts are longer than maximum figures posted," and upon investigation I have found the length would exceed the maximum posted yet had not reached the limit of five per cent. allowed by law. I would say, however, that on high-picked, fine goods, five per cent. seems an excess of length. For example, a sixty-yard cut, woven double, usually measures from one hundred and twenty-four and a half yards to one hundred and twenty-five and a half yards; and, even at the great rate of speed at which looms are driven, it must take hours to weave those extra yards, if the goods are heavily picked, yet the price paid is based on the minimum length or intended number of yards.

The mercantile law is operating as well as is consistent with its requirements. In restaurants, where seven days constitute a week's work, some proprietors object to its provisions. It is unnecessary to go into details. Your orders are to enforce the law, and proprietors of those places are made to comply with it. In some places women have been displaced by men, as the proprietor could not comply with the number of hours on his schedule, and still employ female help. Those cases are few, however.

The sanitary condition of most, in fact of all, of the factories in this district is such as to warrant few changes. Occasionally an order to clean or whitewash closets is all that is needed to keep them in proper condition.

The usual attention is given to securing suitable seats for women employed, and in keeping the work rooms clean. Though many of these facts and observations seem to have but slight significance, yet it is the close observation of little things that will keep factory inspection at the high standard which it is your desire to maintain.

Summary.

Inspections,	333
Orders issued,	123
Compliances,	121

Number of inspections in each city or town:—

Fall River,	160	Westport,	4
New Bedford,	102	Fairhaven,	2
Taunton,	34	Mansfield,	3
Attleborough,	21	Cottage City,	7

BOILER INSPECTION DEPARTMENT.

REPORT OF INSPECTOR EVERETT B. DYER.

District No. 1.

SIR:—In accordance with your directions, I hereby respectfully submit a report of the work done in District No. 1 for the year 1902.

Summary of Examinations.

Applications for license received,	413
Licenses granted:—	
First-class engineers,	2
Second-class engineers,	14
Third-class engineers,	27
Special licenses,	92
Firemen's licenses,	79
Hoisting and portable engineers,	19
Steam-fire engineers,	3
Licenses refused,	177
Licenses revoked,	1
Renewals,	300

Summary of Inspections.

Boilers inspected,	263
Defects found,	690
Dangerous defects found,	387
Boilers ordered repaired,	166
Certificates granted,	247
Boilers condemned,	3

REPORT OF INSPECTOR DAVID H. DYER.

District No. 2.

SIR:—I have the honor to forward herewith my tabulated report of boiler inspections and examinations of engineers and firemen for the year ending Oct. 15, 1902.

Summary of Examinations.

CLASS.	Applied for.	Granted.	Renewals issued.
First-class engineers,	108	25	121
Second-class engineers,	159	81	84
Third-class engineers,	119	96	62
Special engineers,	110	193	95
Hoisting and portable engineers,	44	36	26
First-class firemen,	339	202	228
Low-pressure firemen,	-	29	19
Special firemen,	-	74	31
Licenses refused,	-	143	-
Totals,	879	879	666

New applications received,	860
Revoked for untrustworthiness,	1

Summary of Inspections.

Boilers inspected,	279
Defects found,	2,438
Dangerous defects found,	496
Boilers ordered repaired,	114
Boilers condemned,	1

REPORT OF INSPECTOR JAMES B. DESHAZO.

District No. 3.

SIR:—I have the honor to submit a tabulated statement of the work performed by me during the past year. The requirements of the law for the inspection of steam boilers and the examination of engineers and firemen is generally appreciated by the public and those interested in steam engineering.

Summary of Examinations.

Applicants for licenses examined,	709
Applicants rejected,	200
Licenses granted:—	
First-class engineers,	6
Second-class engineers,	21
Third-class engineers,	54
Firemen to have charge of low-pressure boilers,	2
First-class firemen,	134
Special firemen,	137
Special engineers,	144
Hoisting and portable engineers,	11
Renewals,	635
Licenses revoked,	3
Complaints investigated,	37

Summary of Inspections.

Boilers inspected,	250
Boilers inspected for the first time by the State,	68
Defects found,	688
Dangerous defects found,	214
Boilers ordered repaired,	151
Certificates issued,	245
Boilers removed,	12

REPORT OF INSPECTOR FREEMAN H. SANBORN.

District No. 4.

SIR:—Complying with your request, I have the honor to submit to you a tabulated report of work done by me in District No. 4 during the year just closed. The result seems to be about the same as in previous years, with a slight falling off in the number of examinations for license.

Summary of Examinations.

Applications received,	487
Examinations for license,	479
Licenses granted:—	
First-class engineers,	6
Second-class engineers,	15
Third-class engineers,	26
Firemen,	147
Special,	154
Hoisting and portable engineers,	24
Licenses rejected,	107
Second issue,	294
Third issue,	78
Licenses revoked,	5

Summary of Inspections.

Boilers inspected,	261
Orders for repairs,	61
Defects found,	243
Dangerous defects found,	155
Boilers condemned,	6

REPORT OF INSPECTOR CHARLES FERGUSON.

District No. 5.

SIR:—By your order I respectfully render a report on the examination of engineers and inspection of steam boilers performed by me during the year 1902.

Summary of Examinations.

Number of examinations,	638
Licenses granted :—	
First-class engineers,	15
Second-class engineers,	20
Third-class engineers,	54
Special engineers,	112
Hoisting and portable engineers,	24
Firemen,	180
Licenses rejected,	233
Licenses renewed,	651

Summary of Inspections.

Boilers inspected,	242
Boilers repaired,	140
Defects found,	514
Dangerous defects found,	301
Boilers condemned,	1

REPORT OF INSPECTOR JOHN H. KAZAR.

District No. 6.

SIR :— I most respectfully submit to you my annual report for the year ending Oct. 20, 1902.

Summary of Examinations.

Number of examinations,	575
Licenses granted :—	
First-class engineers,	9
Second-class engineers,	16
Third-class engineers,	38
Hoisting and portable engineers,	22
First-class firemen,	50
Low-pressure firemen,	3
Special engineers and firemen,	245
Licenses refused,	192
Licenses renewed,	579

Summary of Inspections.

Boilers inspected,	235
Boilers repaired,	104
Boilers condemned,	1
Defects found,	349
Dangerous defects found,	220

REPORT OF INSPECTOR LOUIS AMELL.

District No. 7.

SIR:—I have the honor to submit my seventh annual report of work performed in District No. 7, comprising Berkshire and Franklin counties, for the year ending Oct. 15, 1902.

Summary of Examinations.

Applicants for licenses examined,	478
---	-----

Licenses granted:—

First-class engineers,	7
Second-class engineers,	16
Third-class engineers,	25
Special engineers,	190
Portable and hoisting engineers,	30
Low-pressure firemen,	5
First-class firemen,	33
Firemen to have charge,	4
Special firemen,	116
Licenses refused,	52
Applications cancelled,	18
Cases prosecuted,	2
Fine paid (\$10),	1
Applications received,	402
Complaints investigated,	41
Licenses revoked,	3
Licenses renewed,	181

Summary of Inspections.

Boilers inspected,	296
Defects found,	461
Dangerous defects found,	187
Boilers ordered repaired,	195
Boilers condemned,	2

REPORT OF INSPECTOR JOHN MCGRATH.

District No. 8.

SIR:—In compliance with your instructions, I herewith transmit my annual report, giving number of engineers and firemen examined and boilers inspected.

Summary of Examinations.

Number of examinations,	647
Licenses granted :—	
First-class engineers,	8
Second-class engineers,	28
Third-class engineers,	45
Hoisting and portable engineers,	7
Firemen,	70
Low-pressure firemen,	11
Special engineers,	92
Special firemen,	55
Special low-pressure firemen,	41
Steam-fire engineers,	2
Licenses refused,	288
Renewals,	701

Summary of Inspections.

Boilers inspected,	244
Defects found,	270
Dangerous defects found,	163
Boilers ordered repaired,	88
Boilers condemned,	2

REPORT OF INSPECTOR STURGIS C. BAXTER.

District No. 9.

SIR:—In compliance with your orders, I submit my annual report for the year ending Oct. 15, 1902.

Summary of Examinations.

Applications received,	1,052
Licenses granted :—	
First-class engineers,	21
Second-class engineers,	42
Third-class engineers,	72
Special engineers,	258
First-class firemen,	195
Hoisting and portable engineers,	17
Low-pressure firemen,	7
Steam-fire engineers,	2
Licenses refused,	438
Licenses renewed,	829

Summary of Inspections.

Boilers inspected,	250
Boilers ordered repaired,	56
Defects found,	113
Dangerous defects found,	70
Boilers put out of service,	4

REPORT OF INSPECTOR JOSEPH H. McNEILL.

District No. 10.

SIR:—I have the honor to submit my report of work done in District No. 10.

The internal care of boilers shows improvement, better methods being used for the prevention and removal of incrustation. Repairs to boilers and their connections, caused by deterioration from age and service, and changes and additions to the appendages to meet the State requirements, have been necessary in many cases.

Summary of Examinations.

Applications received,	664
Licenses granted:—	
First-class engineers,	7
Second-class engineers,	17
Third-class engineers,	33
Hoisting and portable engineers,	6
Steam-fire engineers,	1
Low-pressure firemen,	19
Firemen to operate,	114
Special licenses,	254
Licenses rejected,	201
Applications on file,	12
Cases prosecuted,	4
Licenses revoked,	1
Licenses renewed,	432

Summary of Inspections.

Boilers inspected,	263
Defects found,	669
Dangerous defects found,	221
Boilers ordered repaired,	104
Boilers condemned,	3

CLOTHING INSPECTION DEPARTMENT.

REPORT OF INSPECTOR JOHN E. GRIFFIN.

Special Duty.

SIR: — I respectfully submit the following summary of my work during the year 1902.

The conditions governing the manufacture of clothing in the State have not changed any from last year, nor the law relating thereto, except in the phraseology made by the revision of the Public Statutes. The manufacture of men's and boys' clothing is still mostly done by contractors, many of whose workshops are at times none too clean, especially as regards water-closets. Most of the orders sent them pertain to this negligence both upon the part of the employer and employees. The finishing of trousers is sublet by these contractors almost entirely to our foreign population, residing in our crowded city sections, requiring continual visits, in order that strict attention as to cleanliness may be observed. The home workers upon ladies' and children's garments are mostly of the English-speaking class, occupying generally clean tenements in the suburbs, and requiring only an occasional visit. The price paid for this latter class of work is so low that a great many applicants for a license only manufacture a few dozen and then discontinue in disgust. This requires a great amount of clerical work, as each one receives a temporary license and a notice sent them after thirty days, the expiration time of the temporary license. Many who are sent here by contractors for a license reside in buildings known to us to be so filthy that we refuse to accept their applications. This should clearly show the effectiveness of the license law in preventing such contractors from having their work made in tenements, regardless of cleanliness or danger from contagious diseases.

During the year there were only ten cases of contagious diseases in my district in buildings where clothing was being made, and among that number only one case of small-pox, although, as is well known, that disease for a time was prevalent.

One building containing several tailors was found in such a filthy state as to be unfit for the manufacture of clothing, and the occupants were obliged to move into suitable work rooms.

The revision of the law relating to time tables will be of inestimable value to us in enforcing the ten-hour law during the coming year among these contractors, by the saving of time heretofore lost in watching them.

Summary.

Licenses outstanding Oct. 1, 1901,	385
Licenses granted during the year,	151
Licenses revoked during the year,	126
Licenses outstanding Oct. 1, 1902,	410
Licenses refused during the year,	92
Licenses renewed during the year,	110
Licenses transferred during the year,	15
Visits to licensed and unlicensed places,	627
Total inspections and visits for the year,	1,124
Workshops inspected during the year,	110
Workshops visited during the year,	56
Orders issued during the year,	62

REPORT OF INSPECTOR JOHN H. PLUNKETT.

Special Duty.

SIR:—A report of the work performed during the year in the enforcement of the law relating to the manufacture of wearing apparel in tenement and dwelling houses is herewith submitted, together with a summary of the number and result of inspections made.

The greater portion of the time is required to be devoted to the inspection of tenements in the more densely populated sections. In these localities reside people who are engaged in the making and finishing of men's and boys' clothing, and where there is a constant changing of tenants and a corresponding change in the conditions of this class of buildings. The majority of people engaged in the other branches of the clothing industry, and who perform the work in their dwellings, are residents of suburban localities, where sanitary conditions are better and where cleanliness generally prevails.

The license feature of the law is now thoroughly understood and complied with by the people who are engaged in the many and varied branches of the manufacture of wearing apparel. The conditions upon which licenses are granted for the making of garments in dwellings are generally lived up to, and no flagrant violation of these conditions have occurred, due to the negligence of the parties holding a license. The large amount of clerical labor incident to the enforcement of this law cannot of course be shown by any summary of work performed. Hundreds of women procure a license, and, after working a short time, find that they are unable to earn sufficient to warrant their continuance in this occu-

pation, and the temporary license which is given them is seldom returned until they are notified to do so. It is surprising in this connection to find that hundreds of women can be secured to devote their spare time to the making or finishing of garments for a compensation so small that competition in these lines from women who are obliged to earn their own living is practically impossible.

I find that there is some slight improvement in the condition of the regular workshops which I have inspected over former years; some have moved to cleaner and better buildings, but, in order to have a proper standard of cleanliness maintained, frequent visits seem to be the only remedy.

Summary.

Licenses outstanding Oct. 1, 1901,	1,166
Licenses granted during the year,	426
Licenses revoked during the year,	487
Licenses outstanding Oct. 1, 1902,	1,105
Licenses refused during the year,	451
Licenses renewed during the year,	149
Licenses transferred during the year,	95
Visits to licensed and unlicensed places,	373
Total inspections and visits for the year,	1,881
Workshops inspected during the year,	71
Workshops visited during the year,	65
Orders issued during the year,	84

SUMMARY OF INSPECTION WORK.

BUILDING INSPECTION DEPARTMENT.

Inspections,	8,998
Males employed,	335,829
Females employed,	195,927
Children employed, fourteen to sixteen years of age, .	16,906
Elevators inspected,	2,472
Orders issued,	3,590

BOILER INSPECTION DEPARTMENT.

Summary of Examinations.

Licenses granted,	4,487
First-class,	106
Second-class,	270
Third-class,	470
Special,	2,161
Firemen,	1,284
Hoisting,	196
Licenses refused,	2,031
Licenses renewed,	5,346

Summary of Inspections.

Boilers inspected,	2,583
Defects found,	6,435
Dangerous defects found,	2,414
Boilers ordered repaired,	1,089
Boilers condemned,	35

CLOTHING INSPECTION DEPARTMENT.

Summary of Licenses.

Inspections and licenses granted,	577
Inspections and licenses refused,	543
Inspections and licenses transferred,	110
Inspections and licenses renewed,	259
Inspections and licenses revoked,	613
Licensed and unlicensed tenements visited,	1,000
Total inspections and visits,	3,105
Licenses outstanding Oct. 1, 1902,	1,515

FIRE MARSHAL'S DEPARTMENT.

The transfer of the powers and duties of the State Fire Marshal to the Massachusetts District Police has shown the wisdom of the Legislature in its efforts to make more efficient the important work of that department. Under the immediate direction of the able deputy in charge the duties devolving upon that department have been performed in a most satisfactory and efficient manner. The provisions of the statute creating this new department of the District Police require that the annual report of the deputy chief shall be transmitted to the Insurance Commissioner.

RECOMMENDATION.

The constantly increasing demand for the services of the officers of the detective department of this force justifies me in recommending that six additional men, qualified to perform the duties devolving upon the officers of that department, be added to the force, and that a deputy chief be appointed to take charge of said department, under the direction of the chief of the District Police.

I would also recommend that two additional men be appointed to the inspection department of the District Police, qualified to perform the duties of said office.

DETECTIVE DEPARTMENT.

DETECTIVE DEPARTMENT.

The detective department of the District Police force now consists of thirteen members, one of whom is detailed especially to enforce the fish and game laws of the Commonwealth, and the remaining twelve members are assigned to the different districts throughout the State, subject to the call of the district attorney of the district, who in many cases calls upon them to secure evidence against persons under arrest and prepare the case for trial. The officers of this branch of the service have a very wide experience, and must be ready at all times to cope with any class of crime.

SPECIAL DUTIES.

Officers of this department have been called upon for special duty at Barnstable, Braintree, Danvers, Framingham, Hubbardston, Lancaster, Marshfield, Middleborough, Millbury, Orleans, Rutland, Spencer, Sturbridge, Wakefield, Weymouth and Worcester.

ARRESTS.

Arrests have been made to the number of 254; total number of cases investigated, 671; total value of property recovered, \$5,169.25.

REPORTS OF OFFICERS BY DISTRICTS.

Hampshire and Franklin Counties.

Officer James McKay. Total number of cases investigated, 99; total number of arrests, 44; total value of property recovered, \$1,688.75; total number of days assigned for special duty, 14.

Among the most important cases investigated were the following: —

THOMAS J. FITZGERALD. Crime, breaking and entering and larceny. Found guilty; sentenced to the Massachusetts Reformatory.

SPOSA SMERALDA. Crime, assault with intent to murder. Found guilty ; sentenced to one year in the Woman's Prison at Sherborn.

EDWARD F. SMITH. Crime, manslaughter. Adjudged insane, and committed to asylum at Bridgewater.

LOUIS BITZER. Crime, murder. Indicted ; awaiting trial.

MILLARD MORTON. Crime, forgery. Found guilty ; sentenced to not less than three or more than three and a half years in the Massachusetts State Prison.

WALTER REED. Crime, breaking and entering and larceny. Found guilty ; sentenced to one year in the House of Correction.

GEORGE BAILEY. Crime, breaking and entering and larceny. Found guilty ; sentenced to not less than three or more than four years in the Massachusetts State Prison.

JAMES MAHAR. Crime, larceny from the person. Found guilty ; sentenced to the Massachusetts Reformatory.

JOHN MALONE. Crime, breaking and entering and larceny. Found guilty ; sentenced to the Massachusetts Reformatory.

NELSON DAME. Crime, breaking and entering and larceny. Indicted ; awaiting trial.

OCTAVE LAING. Crime, assault with intent to ravish. Case pending.

LEVI PETUODE. Crime, breaking and entering and larceny. Case pending.

GIAVONNI BERTELLA. Crime, rape. Case pending.

ANDREW CASTELINI. Crime, rape. Case pending.

HERBERT V. BECK. Crime, breaking and entering and larceny. Case pending.

ANTONY GREENGAGE. Crime polygamy. Case pending.

GEORGE CORBIER. Crime, larceny from a building. Found guilty ; sentenced to four months in the House of Correction.

GEORGE BERNARD. Crime, larceny from building. Case pending.

Nantucket and Dukes Counties.

Officer Thomas A. Dexter. Total number of cases investigated, 49; total number of arrests, 31; total value of property recovered, \$48.

Among the most important cases investigated were the following:—

EDWARD A. MULLIKIN. Crime, manslaughter. Indicted; case pending.

JOSEPH KAIN. Crime, breaking and entering and larceny. Indicted; case pending.

LYMAN PETERS. Crime, breaking and entering and larceny. Found guilty; discharged under the statute of limitation.

JOHN LOVETT. Crime, breaking and entering and larceny. Found guilty; placed on file.

JOHN MEDERIES. Crime, breaking and entering and larceny. Found guilty; sentenced to the Lyman School for Boys.

JOHN SOUZA. Crime, breaking and entering and larceny. Found guilty; sentenced to the House of Correction at New Bedford.

Middlesex County.

Officer Jophanus A. Whitney. Total number of cases investigated, 25; total number of arrests, 7.

Among the most important cases investigated were the following:—

JANE TOPPAN, arrested the latter part of October. Worked on the case, assisting Officer Letteney, by request of District Attorney L. L. Holmes, until Dec. 31, 1901.

WILLIAM C. WAKEFIELD. Crime, perjury. Found guilty; sentenced to the Massachusetts Reformatory.

MARTHA S. MUNSEY. Crime, forgery and uttering. Arrested in New Hampshire; case now pending before the supreme court of said State, on habeas corpus proceedings.

NINA DANFORTH. Assisted the chief of Framingham and Officer Dunham.

JOSEPH W. BLONDIN. Crime, murder. By detail from March 24 to May 11.

EDWARD CARTER, *alias* GEORGE W. HUGHES. Crime, murder. Found guilty of murder in the second degree; awaiting sentence.

Barnstable County.

Officer Simeon F. Letteney. Total number of cases investigated, 73; total number of arrests, 31; total value of property recovered, \$250; total number of days assigned for special duty, 24.

Among the most important cases investigated were the following:—

LUELLEN TOBEY. Crime, assault with a dangerous weapon. Found guilty; sentenced to one year in the House of Correction.

ROLAND W. PERRY. Crime, breaking and entering and larceny. Found guilty; sentenced to one year in the House of Correction.

ELIAS SADAKAKA. Crime, assault with intent to commit rape. Found guilty; sentenced to eighteen months in the House of Correction.

ALONZO ELLIS. Crime, perjury. Indicted; awaiting trial.

ENSIGN E. HOWES. Crime, forgery. Indicted; awaiting trial.

HARRY N. VINCENT. Crime, assault and robbery. Indicted; awaiting trial.

JOSEPH DEMORAN. Crime, fugitive from justice. Turned over to an officer from Norwich, Conn.

Bristol County.

Officer Alfred B. Hodges. Total number of cases investigated, 51; total number of arrests, 16; total value of property recovered, \$75; total number of days assigned for special duty, 53.

Among the most important cases investigated were the following:—

GEORGE WINSLOW. Crime, receiving stolen property. Indicted; case pending.

JOHN R. GREENWOOD. Crime, receiving stolen property. Indicted; awaiting trial.

PHILIP H. CLARK. Crime, poisoning a well. Indicted; awaiting trial.

Essex County.

Officer Daniel W. Hammond. Total number of cases investigated, 95; total number of arrests, 9; total value of property recovered, \$275.50; total number of days assigned for special duty, 53.

Among the most important cases investigated were the following:—

JOHN D. MUTCH. Crime, manslaughter. Found guilty; sentenced to not less than six or more than eight years in the Massachusetts State Prison.

JOSEPH WHITE. Crime, breaking and entering and larceny. Found guilty; sentenced to one year in the House of Correction.

WILLIAM LAWYER. Crime, breaking and entering and larceny. Found guilty; sentenced to one year in the House of Correction.

JAMES F. TRACEY. Crime, breaking and entering and larceny. Found guilty; sentenced to one year in the House of Correction.

Officer George C. Neal. Total number of cases investigated, 51; total number of arrests, 28; total value of property recovered, \$2,000; total number of days assigned for special duty, 70.

Among the most important cases investigated were the following:—

HORACE C. VAN DENBERGH. Crime, perjury. Found guilty; sentenced to not less than five or more than ten years in the Massachusetts State Prison. Van Denbergh was arrested in New York City, and brought back on requisition papers.

JAMES MILTON. Crime, breaking and entering vessels, three counts. Found guilty; sentenced to not less than five or more than ten years in the Massachusetts State Prison.

ALBERT M. HORNE. Crime, breaking and entering, five counts. Found guilty; sentenced to not less than three and one-half or more than five years in the Massachusetts State Prison.

WILLIAM E. WALKER. Crime, breaking and entering, five counts. Found guilty; sentenced to not less than three and one-half or more than five years in the Massachusetts State Prison.

EUGENE L. KELLEY. Crime, breaking and entering. Found guilty; sentenced to eight months in the House of Correction.

WALTER R. SHEPARD. Crime, larceny, three counts. Found guilty; sentenced to one year in the House of Correction. Shepard was arrested in Colorado, and brought back on requisition papers.

KAFNO YASHIKAWA. Crime, larceny, two counts. Indicted; case pending.

CLARENCE F. SMITH. Crime, larceny. Found guilty. Restitution of \$1,000 was made, and the case was placed on file.

Norfolk and Plymouth Counties.

Officer George C. Pratt. Total number of cases investigated, 55; total number of arrests, 15; total value of property recovered, \$320; total number of days assigned for special duty, 27.

Among the most important cases investigated were the following:—

JENNIE A. GUIELD. Crime, forgery. Found guilty; sentenced to fifteen months in the Woman's Prison at Sherborn.

S. C. WITHINGTON. Crime, forgery. Found guilty; sentenced to the Concord Reformatory.

CHARLES MAWN. Crime, manslaughter. Case pending.

FRANK T. CULLAN. Crime, manslaughter. Case pending.

FRANK M. GALUSEA. Crime, manslaughter. Case pending.

Middlesex County.

Officer George Dunham. Total number of cases investigated, 30; total number of arrests, 25; total number of days assigned for special duty, 105. During the past year Mr. Dunham has been assigned a good part of the time at headquarters for office duty.

Worcester County.

Officer Peleg F. Murray. Total number of cases investigated, 31; total number of arrests, 15; total value of property recovered, \$200; total number of days assigned for special duty, 24.

Among the most important cases investigated were the following:—

WILLIAM H. KELLEY. Crime, embezzlement. Found guilty; sentenced to eighteen months in the House of Correction.

LEON M. HAPGOOD. Crime, murder. Pleaded guilty to murder in the second degree; sentenced to the Massachusetts State Prison for life.

CARL FREDERICK TORNO. Crime, murder. Awaiting trial.

JUDSON C. FIELDS. Crime, arson. Awaiting trial.

GEORGE H. WHITNEY. Crime, assault with intent to murder. Found guilty; sentenced to not less than five or more than six years in the Massachusetts State Prison.

JAMES BURKE. Crime, larceny. Found guilty; sentenced to not less than three or more than four years in the Massachusetts State Prison.

PATRICK FLANIGAN. Crime, larceny. Found guilty; sentenced to not less than three or more than four years in the Massachusetts State Prison.

Suffolk County.

Officer Frederick A. Rhoades, detailed for duty at headquarters, State House, Boston, Mass. Total number of cases investigated, 30; total number of arrests, 9; total value of property recovered, \$4; total number of days assigned for special duty, 133.

Berkshire and Hampden Counties.

Officer Oliver L. Wood. Total number of cases investigated, 64; total number of arrests, 12; total value of property recovered, \$233; total number of days assigned for special duty, 15.

Among the most important cases investigated were the following:—

ARTHUR SNOW. Crime, larceny. Found guilty; sentenced to one year in the jail at Pittsfield.

EDWIN LLOYD. Crime, breaking and entering and larceny. Found guilty; sentenced to four years in the jail at Springfield.

FRANK MORAN. Crime, breaking and entering and larceny. Found guilty; sentenced to the Massachusetts Reformatory.

JOHN FREEMAN. Crime, manslaughter. Found guilty; sentenced to two years in the jail at Pittsfield.

Steamer "Lexington."

Officer William H. Proctor. Total number of cases investigated, 18; total number of arrests, 1; total value of property recovered, \$75; total number of days assigned for special duty, 128; rescued from drowning, 2.

Among the most important cases investigated was the following:—

JOSEPH W. BLONDIN. Crime, murder. Awaiting trial.

I have commanded the steamer "Lexington" from the first day of April until the twelfth day of October, when said steamer went into winter quarters at Edgartown. With the exception of one trip to Boston to make repairs to the machinery, the steamer has been cruising in Buzzard's Bay during the entire season. There have been very few bluefish, but a great abundance of squeteague, mackerel and menhaden all through the summer. Menhaden steamers have been sighted at different times in the bay, but no attempt has been made to violate the law. The present lobster law is no protection to the lobster, and in my opinion should be changed to a close season from July 1 to January 1, or a regulation of the traps. The steamer has been used on official business for the State by the Board of Harbor and Land Commissioners and the committees of the Legislature on harbors and public lands and fisheries and game.

GENERAL OFFENCES PROSECUTED.

Consolidated Statistical Report.

REPORTS OF ACCIDENTS.

REPORTS OF ACCIDENTS IN MANUFACTURING AND MERCANTILE ESTABLISHMENTS.

In proportion to the total number of accidents reported during the year, those arising from causes other than in the operation of machinery constitute almost two-fifths, or nearly forty per cent., of the accidents reported from all sources. These cases, it may be assumed, are not of that class to which the law has application, and to enumerate their causes will not be necessary in this report, but in a general way the nature and circumstances of their happening will be shown later on in the figures given. While there would seem to be no legal requirement in sending reports of such occurrences, they have served to indicate a desire and purpose to observe the law in its widest scope, rather than make a possible breach in any of its provisions. About the same proportion exists in this respect as has been the average of preceding years with their similar conditions and results, making a much greater total in the record of the accidents; but the facts connected with them being clearly shown, it will readily be seen that no provision could possibly be made to meet those contingencies.

With the best known appliances for safety provided, and the consequent elimination of much danger and risk, protection from injury in the running of dangerous machinery is in a very great degree ensured, the number of accidents lessened thereby, and more serious consequences averted. To render a full compliance with the law relating to these safeguards, the work of the inspectors of this department is at all times directed, and constant vigilance to that end on the part of every inspector is enjoined. Of all such work performed written reports are filed in this office, and, wherever inspection has revealed defects in their nature likely to

cause accident, the attention of those in charge is at once called to the fact, and notice thereupon served to make such changes or alterations as will render the machinery safe for operation, and in every way to conform to the provisions of the statute. From the number and extent of their reports as submitted, and the resulting work based on their investigations, there is much to indicate that the efforts of the inspectors in this direction have been earnest and diligent.

The law requiring reports of accidents to be sent to the chief of the District Police is now contained in section 17 of chapter 106 of the Revised Laws, and reads as follows:—

SECTION 17. All manufacturers, manufacturing corporations and proprietors of mercantile establishments shall forthwith send to the chief of the district police a written notice of any accident to an employee while at work in any factory, manufacturing or mercantile establishment operated by them, if the accident results in the death of said employee or in such bodily injury as to prevent him from returning to his work within four days thereafter. The chief of the district police shall forthwith transmit to the sender of such notice a written or printed acknowledgment of the receipt thereof, and he shall keep a record of all accidents so reported to him, of the name of the person injured, of the city or town in which the accident occurred and the cause thereof, and shall include an abstract of said record in his annual report. Whoever fails to send notice of an accident as required by this section shall be punished by a fine of not more than twenty dollars.

The number of accidents which have occurred while operating machinery, reported to this office during the year, is 1,491. This number includes those caused by elevators and hoistways. The other casualties of which mention has been made, and which had their origin in causes not due to running machinery, number 990, and are not enumerated in the list given of those which were due to motive power. Of the latter class, the list is here presented, stating the causes of their occurrence, with the number of cases happening from each cause. The fatal accidents, being more fully referred to in another part, are not included in the list which follows.

Injured by machinery in cotton, woolen and paper mills and shoe factories,	1,011
Injured by machinery in iron works, planing and saw mills and other mechanical establishments,	297
Injured by belting, pulleys and shafting,	80
Injured by being caught between elevator car and flooring, while riding on car or working about same,	51
Injured by falling through elevator well,	5
Injured by fall of elevator car,	4
Injured by electric shock,	2
Injured by breaking of pulleys,	2
Injured by bursting of emery wheel,	1
Injured by bursting of fly wheel,	1
Injured by explosion of gas in core oven,	1
Injured while cleaning machinery in motion, or while removing waste, bobbins or other articles caught or entangled in machines (included in figures above given),	443
Injured from causes not here enumerated,	990

Of the number not enumerated in the foregoing list, the causes which led to the injuries in most of the cases will be here shown. In 439 of these cases the accidents happened to persons who were at the time employed at work not done by machine, who were making repairs as carpenters or machinists in some part of the factory or workshop, or who were engaged as laborers in the yards and in storehouses handling goods for shipment, in moving machinery, lumber, receiving stock for manufacture, in the loading and unloading of cars and trucks, and in the various duties performed in the general work or business of factories. There were 96 cases resulting from scalds or burns, mainly received in dye houses in the one instance, and in the other from molten iron in foundries; 63 persons were injured by splinters in their hands or feet, or by stepping on nails projecting from floor; 56 others suffered cuts and bruises in handling tools at their work; and 65 were hurt by the falling of weights of various descriptions. Falls from ladders, stagings and platforms caused injuries to 54 persons; falls from other sources increased the list by 92 more; and pieces of steel or other materials flying from anvils and forges, flying sparks, etc., added 32 others to the number; the remaining cases being made up of innumerable mishaps incident to every-day life, and not confined to any particular limits.

A most regrettable and disappointing fact, as shown from the reports of accidents, is the large number injured in a heedless and careless moment, while cleaning machinery at the time in motion, or in trying to pick out waste, bobbins or other materials which had in some way fallen into the machinery or become caught therein. The number of persons injured in this manner was fully thirty per cent. of the entire number injured by machinery, the accidents occurring from this source being 443. In consequence of this thoughtless and reckless action on the part of so many operatives, contrary to the rules regulating the cleaning of machinery, and seemingly oblivious to the danger always present in such surroundings, the list has been greatly augmented, and much pain and suffering endured which ordinary care and watchfulness would have avoided.

The more serious cases, resulting in the loss of some member, are here mentioned, some of them with special reference to the facts attending their occurrence. Injuries to the hand were in the greatest number, 1,332 being reported; and of these, 976 were to the fingers and thumb. In each of 23 cases one finger was taken off, and in each of 7 cases the thumb was lost. In 12 cases each of the persons lost two fingers, in 4 cases each person suffered the loss of three fingers, and in 2 cases each all four fingers were lost. In 4 cases each the thumb and one finger were taken off, and in 1 instance the loss of the thumb and three fingers occurred. Loss of one finger and portions of others was sustained in each of 3 cases, and partial loss of the thumb or fingers was suffered in each of 98 cases. Seven persons each lost one hand, 5 cases being the right hand. Eleven had wrists broken. Two hundred and thirteen persons received injuries to the arm or shoulder. In 6 cases each person lost an arm, 3 of which being the right arm. There were 19 others who had arms broken. In 21 cases the leg or ankle was broken or fractured, and the ankle sprained in several more. About 450 persons were injured on the leg or foot, and these accidents were mainly to those who were employed as laborers, and among the ones classed as not enumerated in the list which has been presented. In 1 case the right

foot was amputated. Injury to the head was reported in 243 cases, in 21 of which occurred scalp wounds of more or less serious nature. Loss of one eye occurred in each of 4 cases, in 2 of which by pieces of wire striking the eye, in another being struck by a breaking belt, and in the fourth case being struck by a flying shuttle. In 2 cases the jaw was broken, one caused by belt shipper, and the other by an elevator. The collar bone was broken or injured in 6 cases, in 20 cases one or more ribs were broken, and general bodily injuries resulted in a dozen or more instances. Other injuries resulting were of temporary effect only, and slight in their nature.

An engineer was injured by fly wheel of engine bursting. Part of the wheel struck main steam pipe running to engine, knocking steam pipe down, and causing his right foot to be pinioned between the same and the floor, crushing the bones of the ankle; amputation of the foot was necessary.

A woman employed as a weaver met with a most painful and serious accident, and one which was a narrow escape from being fatal. She was caught by the hair on a shaft. She had gone to the cellar of the mill to get some hot water, in which cellar are several lines of shafting to drive the looms above. She started to return, when her head struck a shaft, and her hair, being loose, caught on this shaft. With rare presence of mind she pressed both hands on her head and held on fast until the hair which was caught was torn out by the roots, some of it being burned off by contact. She sustained in consequence several bad scalp wounds, but the injuries are not thought of a permanent nature. It was a most fortunate escape from death.

An operative lost his right hand on a picker machine. He was trying to clean one of the cylinders while the machine was in motion, and, lifting the small door on the top of the picker, he put his hand between the cylinders. His hand was caught and mangled in a terrible manner. He was taken to the hospital immediately, where the hand was amputated at the wrist.

An employee in a wire factory, while taking a piece of wire off the block, the pin on the block caught in his mitten,

twisting his arm around the block, and taking the arm off at the shoulder before the block could be stopped.

In another case, while a man was examining a piece of machinery, he accidentally lost his footing, and, in his effort to save himself from falling, got his clothing wound around a shaft, resulting in the loss of his right arm.

A man had his left hand cut off by a band saw. A log was being opened. The sawyer, whom the man injured was helping, was backing the carriage containing the log, and the other man was removing a wedge which had been placed in the saw kerf in front of the saw; and, in doing so, he swung his hand on to the saw, and his hand was severed instantly.

While at work at a paper machine, an operative received injuries resulting in the loss of his right arm. He stepped in back of the first dryer on the machine to pick off a piece of paper from the dryer. Instead of putting his arm over the felt roll and the paper roll to reach the paper, he put his arm over the first, or dryer felt, roll, which runs about two inches from the face of the dryer. In some manner his arm caught and was drawn in between the dryer felt roll and top of dryer. The arm was so badly injured that it was amputated about five inches from the shoulder.

A female employee in a manufactory where confectionery was made was injured so badly that loss of the left arm resulted. The machine on which the accident occurred consisted of two large cylinders of about five inches in diameter and eighteen inches long. In some manner unknown she got her hand and arm between these rollers or cylinders. Her duties in the room were to remove goods from the cutting machine and place them in trays. This task, it is said, did not necessitate her getting within five or six feet of the rollers by which she was injured. The girl was taken to the hospital, where it was found necessary to amputate the arm.

Another female operative, in a shoe factory, while standing on a bench to open a window, had her hair caught on an overhanging shaft, causing a large portion of her hair to be torn out, and inflicting a scalp wound. She was fortunate in freeing herself from the shaft, receiving only a bruised finger in doing so.

Still another accident under like circumstances occurred, and, although not with fatal result, causing the most terrible suffering. A girl employed in a hat factory, desiring to open a window, mounted a table in order to reach the window, and was caught by the hair, the shafting on which she was caught being about ten feet from the floor. From this shafting she hung until the speed was shut off, which was immediately done when her screams attracted attention. She then fell to the floor. A doctor was at once summoned, who upon examination found that not only the scalp had been torn off, but portions of the skin and flesh had been torn from the back and sides of the neck, and also parts of both ears. She was sent to the hospital, and it was reported that, notwithstanding her terrible injuries, she was making favorable progress.

While cleaning a calender roll which was running, the cloth used by the operative was caught in the roll, causing his left hand to be drawn into the machine, injuring the hand so badly that amputation was necessary.

A very serious accident happened at an elevator, where a female operative who was at work in the room was caught by the descending car. She left her work, and, going to the elevator, leaned over to look down to the floor beneath. The elevator was descending, and a cross-bar on the same hit back of her head, forcing her head between bar and edge of flooring next the elevator opening, causing her right jaw to be broken. The elevator was reversed, and the girl was taken out and removed to the hospital for treatment.

In one of the cases where loss of an arm occurred, the man was on his way from the office to the mill, and was walking beside the track, when he was struck by a shifting engine coming from behind, which knocked him down, dragged him some distance, and crushed his left arm, making it necessary to amputate the arm at the shoulder.

The right arm, in another case, was lost under circumstances as follows. While a girl was cleaning a spinning frame, which had been stopped, but was accidentally started by the girl coming in contact with the shipper, her right arm was caught between the spokes of a gear and the

stationary part of the machine. The girl was at once taken to a surgeon, who found it necessary to amputate the arm, two-thirds of the upper arm being taken off.

An employee, in attempting to oil a part of a loom while the machine was running, got his right arm caught and drawn in between moving gears, resulting in the arm being cut off just below the shoulder.

Another case was that of a man employed in a publishing house as an operator on a covering machine, who had his hand caught and drawn into the machine. His hand was badly crushed, the wrist was broken, and the forearm so badly broken and bruised that it became necessary to amputate the arm two inches below the elbow.

While setting a belt in the picking room of a factory, the belt shipper caught in belt, striking a man in the jaw, and causing his jaw to be broken.

The fatal accidents numbered 48. Of these, 12 were caused by circumstances not in any way related to the operation of machinery, and happened as here noted, one in each of the following causes: fell from platform in power house of electric light company; killed by a car thrown from the track; fell between car and platform on to track; struck by a falling column, in iron works; killed by collision of car with engine; drowned in river close to mill; died from a paralytic stroke; fell from roof of mill building; killed by taking hold of an electric wire while climbing over a sand heap, where at work shovelling sand; fell from a platform or staging used in the erection of a building; struck by a piece of iron which fell; killed by a car which tipped over.

The other fatal accidents were due to the following causes: 11 cases were those of persons caught and crushed by elevator cars; 3 by falling through elevator wells; 3 by being caught on shafting or belting; 3 were caused by circular saws; 2 were caught in the beaters of picker machines; and 1 each by the falling of an elevator car, by the bursting of a machine known as "hydro extractor," struck on head by a broom handle which was caught between belt and pulley, while standing on closed trap door of elevator well was

thrown from the same by the ascending elevator lifting the trap door, caught in gears of a wool scouring machine, fatally scalded by falling into cistern of hot water, crushed by a rotary coloring wheel in leather factory, caught and crushed by cylinder rolls in print works, killed while engaged in connecting an electric motor, caught in carding machine, run over and crushed by an electric crane, by the falling of the counter balance weight of elevator killing two persons and injuring several others, by an explosion at fire in mill, fatally injured while attempting to place belt on machine.

The circumstances in these cases, as far as could be learned by investigation, are given here from the reports of the inspectors of this department, with the name of the person fatally injured, the establishment in which the accident happened, and the city or town where the same was located, as follows: —

WILLIAM FITZGERALD, Holyoke. American Writing Paper Company, G. C. Gill division. Date of accident, January 11. Fitzgerald was employed in the rag room, so called, one of his duties being to attend the rag-cutting machine. No one witnessed the accident, but it is supposed that he used a broom handle to shift a belt from the loose to the driving pulley, and in so doing the broom handle was caught between belt and pulley, breaking the broom handle, a piece of which struck him over the left ear, crushing the skull. He was found on the floor in an unconscious condition, and was taken to the hospital, where he died within four hours after the accident.

GEORGE C. MITCHELL, Pittsfield. Nourse & Spooner. Date of accident, January 13. This accident occurred in the grocery department of a general market. Mitchell was the buyer for this department. How the accident occurred is not known, as no one witnessed it, the first knowledge of the same being the discovery of Mitchell's body between the floor and the door casing. It appeared upon investigation that Mitchell pulled the shipper cable to start the elevator from the basement to the next floor, where he was standing. The elevator was provided with an adjustable lock to stop at any floor desired. Upon the approach of the elevator he must have failed to throw the lever in to stop the car, and, as it continued to rise, it is probable that he attempted to board the car

and was caught between the floor of elevator and the casing of the door. His neck was broken and he was instantly killed. The report states that he was familiar with the operation of the elevator.

GEORGE McASSEY, Newton. D. H. Robblee, contractor. Date of accident, January 16. McAssey was at work at a circular saw, cutting a groove in the end of a picture moulding, and in some way the piece of moulding dropped on the saw and was thrown by the same with great force, striking McAssey in the abdomen, penetrating two or three inches, and bursting a blood vessel. He died at the hospital about two hours after the accident.

F. T. LOSCKAMP, Boston. Macullar Parker Company. Date of accident, January 18. Losckamp was at the time of the accident employed as assistant engineer, one of his duties being the oiling of machinery. He was seen going to the elevator, which he ran upward some ten feet, and then stepped into the well. Having been missed, search was made, and the elevator car was found down, and Losckamp was discovered under it, dead. As to how the accident occurred is not known. The supposition is that he may have been at work on shipper rope, and in that case did not notice the plunger descending, the elevator car coming down and crushing him.

JOHN ST. PETER, Holyoke. Connecticut Valley Lumber Company. Date of accident, January 20. John St. Peter was rolling logs on a saw carriage, and in some way not known he fell on carriage frame that carries the logs to the band saw. As he fell he struck the operator, causing him to throw lever forward and the carriage to move swiftly toward a 7-inch band saw, which was running full speed, cutting Mr. St. Peter in two.

JOSEPH RICHARDS, New Bedford. Pierce Manufacturing Corporation. Date of accident, January 28. Richards was a boy, aged fifteen years, and was employed as a sweeper in the spinning room. He was leaving the mill, and in going through the weave room he walked across the trap doors covering the elevator well; at the same time the elevator came up, lifting the trap doors, which are flush with the floor, throwing him between the upright side slide or guide and the open trap door. He was badly crushed about the head and side. He was taken in an ambulance to the hospital, where he died on February 1 following.

GEORGE W. BURGESS, Lowell. Lowell Machine Shop. Date of accident, February 1. Burgess was a young man employed as a painter. He was working on a staging, and in reaching by the end of a one and a half inch shaft his jacket caught on the shaft, and he was drawn on to the same and carried around it. His garments were torn from his body, letting him drop to the floor. His head was terribly mangled, and his body was otherwise badly bruised. He was immediately taken to the hospital, where he died from the effects of the injuries he received, about three hours after the accident occurred.

JAMES H. BARRY, Peabody. National Calfskin Company. Date of accident, February 10. Barry was at the elevator, and he lay down on the floor and placed his head in the small hole in the floor, directly under the counterbalance weights, and through which the weights must pass as the elevator car ascends. He was evidently watching the elevator, and not realizing that the weights were so near. Before he could get his head out, the three hundred pound counterbalance weights struck him, breaking his neck and killing him instantly.

JOSEPH BERRON, Lowell. Appleton Company. Date of accident, February 10. Berron, with three other men, was riding on the elevator, when through some cause the elevator fell two stories. The rope did not break, but it slipped on the pulley of elevator machinery overhead. The fall was thirty feet. The elevator man jumped off at the first landing. Two of the other men were not hurt. Berron, being a heavy man, weighing over two hundred pounds, was shaken up badly when the car struck the bottom. He was taken to the hospital, where he died the evening of the following day, from internal injuries. The elevator had been inspected and tested the previous month, and was found then to be in good condition.

ENOCH SMALL, Groton. Groton Leatherboard Company. Date of accident, March 4. This accident was caused by the man being caught on shafting. His purpose for going near the shafting is not known, his duties being to run a leatherboard machine at the factory, and nothing requiring any work about the shafting. He was caught and carried around a shaft which was making eighty revolutions per minute, and was killed. The report states that he was sixty-two years of age.

WAIDECK PAIDOS, Hardwick. Geo. H. Gilbert Manufacturing Company. Date of accident, March 19. Paidos was employed on a wool-scouring machine, when his sleeve was caught, drawing his arm into the gears, causing the arm to be badly torn between shoulder and elbow. The injury was dressed, and the next morning Paidos seemed to be doing very well, but later in the day fever developed, and he died of surgical fever about noon of the second day.

MORRIS SHAPIRO, Springfield. Smith & Murray. Date of accident, April 14. Shapiro was employed in the tailoring department of the establishment and, with another man, had returned to work in the evening. After finishing their work, which was on the fourth floor of the building, they took the elevator and descended to the basement, where the other man stepped off into an opening, leaving Shapiro on the elevator. Shapiro then pulled the change rope, and the elevator ascended with him. In trying to get off, he was caught between the elevator platform and the brick wall. The alarm was given by the other man, and assistance came. After an hour's hard work, in which they had to cut out a portion of the elevator, they succeeded in removing Shapiro from his position. He was taken to the hospital, but died in the ambulance before they reached there.

JAMES TALBOT, Wakefield. Smith & Anthony Company. Date of accident, May 6. Talbot was employed at a foundry in tending a machine known as a "separator," used for the purpose of separating coke from iron. In wheeling some waste matter away, he crossed over a planking which covered a well or cistern which was used as a catch-basin for the exhaust of the engine, the water in said well or cistern being at times boiling hot; at the time of the accident it was in such condition. In crossing this planking with his wheelbarrow the planking gave way, and Talbot fell into the cistern. He was scalded so badly that he died from the effects of his injuries May 12, six days after the occurrence of the accident.

JOHN KEEFE, Peabody. National Calfskin Company. Date of accident, June 26. Keefe had been in charge of two rotary coloring wheels in the leather factory. The wheel had been stopped so that he could take out the skins that were colored, and fill it with other skins. The shippers operating the wheels are provided with chains to lock them, so that when the wheel is stopped it

cannot be started by any accident to the friction pulleys; but it appears that the wheel at this time was not locked. Keefe was removing the skins from the wheel through a hole in the side of the wheel, his body being partly in the wheel, when suddenly the wheel started, and before he could get out he was crushed between the wheel and the frame on which it rested, and was killed almost instantly.

WALTER V. HARRINGTON, North Adams. Arnold Print Works. Date of accident, June 26. Harrington was employed as tender in the padding room, so called, to run the engine that drives the cylinder dryers, and to clean the cylinders when found necessary. This cleaning process is called in print works "can cleaning," consisting of scraping the cylinders with a piece of plate imbedded in wood, about nine inches long and one inch blade. To do the work properly, a man ascends to the top of the machine, and, with his feet resting on a stationary bar, and one hand grasping a bar above, he uses the other hand to scrape the cylinders. Two men are required at this particular work, one to watch and slowly run the engine, while the other does the cleaning. Harrington was on top, scraping the cylinders, and, in manner not known, his hand was caught between the rolls and drawn in, causing his body to be also drawn into the machinery. All of the ribs on his right side were broken, his head was badly injured, and his neck was found to be broken. He died about an hour after the accident. There appears to be no other way to clean these cylinders.

NICHOLAS COUPERTILIOS, Lowell. Massachusetts Cotton Mills. Date of accident, July 7. Coupertilos was at work on a breaker picker machine, and was cleaning the feed roll while the machine was in motion. He lifted the cover from the beater and put in his hand. The said beater was revolving at the rate of sixteen hundred revolutions per minute. His hand was cut off, his arm was hanging by a piece of skin from the shoulder, and his head was badly crushed. He was conveyed to the hospital, where he died on the operating table.

NICHOLAS BARRAS, Lowell. Lawrence Manufacturing Company. Date of accident, July 30. Nicholas Barras was employed in the card room, and was fatally injured while cleaning a card which at the time was in motion. The card machine was driven by leather belts and ropes, and Barras, in brushing the machine, in some way knocked one of the ropes off a pulley, the rope being caught on a leather belt. Barras took hold of the rope to pull it from the

belt, when the rope became wound around his right arm, pulling the arm completely off from the shoulder. He was taken to the hospital, where he died from loss of blood soon after arriving. The inspector, in his written report, states that there seems to be no way of guarding against such accidents from these machines, except great care on the part of those who are operating them. They are machines in general use in other mills.

CHARLES E. JOHNSON, Somerville. Mason & Hamlin Company. Date of accident, August 1. It appears that Johnson was at work sawing strips of wood, and, as he passed one piece of the wood between the saw and the gauge, the wood caught on the back of the saw and was thrown back with such force that it struck Johnson in the abdomen, causing injuries which resulted fatally in about twenty-four hours afterward.

TIFT REMOSKY, Easthampton. West Boylston Manufacturing Company. Date of accident, August 22. Remosky, or Ebnosky, was a boy about seventeen years old, who was employed as a back boy in the mule spinning room. He went to the elevator to see if there was some roving coming up, and stepped on the elevator hatch door, the elevator being equipped with automatic gates and hatch doors. As he stepped on, the elevator car, ascending, lifted the hatch door, and he was thrown over against the guide post, crushing him to death.

MICHAEL BUTTS, Boston. D. J. Hallissy & Co. Date of accident, August 28. Butts was about sixteen years of age, and was employed as an errand boy. He was on the top floor of the building, and during the noon hour he went to the basement, where he was seen by some of the men, looking around. They shortly afterward heard his cries, and found him caught between the elevator and the flooring. When he was caught, it threw the elevator machinery out of gear, and it was ten or fifteen minutes before he could be released. It was found that his back and some ribs were broken. He was removed to an ambulance, in which he died on the way to the hospital. From all the circumstances which could be learned, it is thought that he either started the elevator himself, or tried to get on to the same after some one else had started it, and was caught between the car and top of the basement door, in which position he was found.

GEORGE BEZZETTI, Boston. Exchange Building, 53 State Street. Date of accident, September 4. Bezzetti was a boy about sixteen

years of age, and was a passenger with others on the elevator from the street floor of said building. As the car ascended, the attendant called the several floors as they were reached, and at the eighth floor one man got off from the elevator, and the door was then closed; but, as the car was passing up, the attendant noticed the Bezzetti boy standing on the threshold of the elevator well, when he immediately reversed the lever and attempted to catch hold of the boy, but too late, for the boy fell backward into the well and was instantly killed.

JOHN DILLON, Boston. L. N. Cushman, 291 and 293 Congress Street. Date of accident, September 8. This was another case where the person killed was an errand boy, and met his death by falling through an elevator well. He was on the second floor of the building, with some bundles to take out. No one saw him fall, and he had been missed only a few minutes when he was found in the elevator well. It appears that he must have fallen upon the elevator, which was filled with mail, and at the time on a level with the shipping floor, and from there again to the floor in the basement. The boy was taken to the hospital, where he died the following morning.

ANTHONY KEINIS, Worcester. American Steel and Wire Company. Date of accident, September 27. Keinis was working on a large electric travelling crane, on which he was repairing an oil cup. He was caught and crushed between the crane and the track. The first that was known of the accident was when his body fell to the ground. From the report it appears that the crane was started without the person who started the same knowing that Keinis was on the track. He was instantly killed.

JOHN BATISTA, Boston. H. Krikorian, 42 Thayer Street. Date of accident, October 1. Batista was trying to adjust a belt on a pulley, using a pole for the purpose. The belt became twisted on the shafting, and, taking a stepladder, he went to the shafting in order to untwist the belt. In some way his arm was caught in the belt, and he was thrown from the step ladder to the floor, breaking his arm and receiving other injuries, from the effects of which he died at the hospital the evening of the same day.

BENJAMIN O. CRANE and **FRANCES HERLIHY**, Lynn. A. E. Little & Co. Date of accident, October 3. This accident was caused by the counterbalance weight of the elevator falling and crashing through the cage of the elevator car, killing two persons

and injuring several others. Mr. Crane, the assistant superintendent, who was killed, started the passenger elevator to carry a number of employees to the stitching room on the fifth floor. When the elevator got between the fourth and fifth floors it suddenly stopped, and he pulled the shipper rope; the car then started down, and continued on to the first floor. While the car was descending, the counterbalance weight was going up in the run provided for it at the side of the well, and when it arrived near the top of the well, something must have come in contact with it. The great strain on the wire rope caused the sheave and its supports to fall, and the rope, falling on the top of the partition, broke, the counterweight started down the run a distance of seventy feet, and when about ten feet above the top of the cage of the car the run opened where it was spliced, and the counterweight, coming out of the run, fell on the top of the cage of the car, crashing through the same, and striking Mr. Crane and Frances Herlihy, a girl employee, killing them both almost instantly. Investigation found that the hoisting machinery, hoisting ropes and safety device on car were in proper condition and working order; the tops of the runs were lagged to a piece of timber four by six inches size, and that in turn was lagged to an ordinary partition, which could not be very strong. Whatever came in contact with the counterweight struck the timber, tearing it from its fastenings and dropping it three or four feet between the runs and the partition.

EDGAR L. ESTES, Lynn. William Porter & Son. Date of accident, October 28. Estes was a carpenter and was engaged in making repairs at the openings to the elevator well. The elevator coming down, caught him between gate and car. The elevator was reversed, but before he could be reached he fell through the well, causing injuries which resulted fatally two days afterward.

FRANK RAFFA, Lowell. Tremont and Suffolk Mills. Date of accident, October 31. Raffa was employed in the picker room, and, while at his work at a picker machine, pulled the dust box out from under the picker, and crawled under the machine while it was in motion, although forbidden to do so. He then tried to clean the grid bars close to the beater, when his left arm was caught in the beater, drawing him on to the same, killing him instantly.

MERTON L. ALDEN, Boston. Walworth Manufacturing Company. Date of accident, November 1. Alden was a boy about

eighteen years of age, and was employed on the fourth floor of the building. He was caught between the elevator car and the flooring, while trying to jump on to the elevator while it was in motion, and was instantly killed. The gates to the elevator were automatic; as the elevator ascended, it carried the gates up, then, as it passed on upward by the landing, let the gates down to place. No one saw the accident occur, but it would seem that, in trying to get on to the car before the gate came down, he was not quick enough in the attempt, and was crushed between the elevator and gate.

WILLIAM J. FALLON, Revere. D. & L. Slade Company. Date of accident, November 14. This accident was the result of an explosion which occurred in a mill where the work of grinding spices and herbs is carried on. It was during the night time, and Fallon and another man were the only ones at work in the mill. Fallon discovered that in the receiving box connected with one of the mills a slight fire was in progress. He reported the fact to the other man, and the two went to the box to extinguish the fire. They took with them a portable fire extinguisher; but before beginning to use the same, and while removing the box, a slight explosion took place, blowing the flame into their faces. Both were burned, but Fallon evidently received the greater part of the flame. It is supposed that he either breathed some of the flame into his lungs or was suffocated in the dense smoke which followed. Being unable to put out the flames with the extinguisher, the other man sought assistance, rushing to the nearest fire-alarm box and ringing in the alarm, bringing the fire department to the place. Fallon was found lying near one of the windows, and efforts were made to resuscitate him; a physician was sent for, but when he arrived and made examination he stated that Fallon was dead.

ALFRED DENEAULT, West Springfield. Mittineague Paper Company. Date of accident, November 18. Deneault was employed on a paper machine as back tender. The part of the machine called the "screen shaker" was not running, and he was in the act of placing the belt from the revolving drum to the drum on screen, when in some way he was thrown to the floor, where the machine tender found him dead, with his neck broken. As no one witnessed the accident, the exact particulars are not known.

W. A. DOLBEARE, Boston. Board of Trade building. Date of accident, November 20. This accident was caused by being caught in elevator. From all that could be learned, it is supposed that

Dolbeare signaled the elevator on its downward trip; that the elevator boy stopped the elevator and opened the door, when, as Dolbeare was entering the car, the lever, from some unaccountable reason, sprang to the right, and the car started downward at a rapid rate. The boy, noting Dolbeare's dangerous position, at once sprang to his assistance, but too late, and he too was drawn in, being caught by the arms, and went down with the elevator, until his body, being wedged in by the side of car, stopped it just below the second floor. Mr. N. W. Mitchell, superintendent of the building, hearing the cries from his office, rushed to the elevator, and, seeing the boy's legs dangling inside the car, at once with the janitor sprang into the car, and was about to start the elevator up, when some one from the floor above cried out not to start up, as there was somebody on top of the car. The door was then opened from above, and the body of Dolbeare was found and taken off. He had probably fallen on the car when the floor from which he started was passed. Both of those injured were taken to the hospital. Dolbeare died soon afterward. The elevator boy was badly bruised, but not seriously injured.

LOUIS P. WALTHOUR, Lawrence. Briggs & Allyn Manufacturing Company. Date of accident, November 21. Walthour was employed as a painter, and, while crossing over an automatic elevator hatch, the elevator, as it was ascending, lifted the hatch, causing Walthour to lose his balance and fall against the partition, being caught and crushed between the hatch and partition in a space of eight and a half inches. He was carried to the hospital, where it was found he had received a compound fracture of the hip and suffered internal injuries, from the effects of which he died two days afterward.

FORFEITED LIQUORS.

Section 80 of chapter 100 of the Revised Laws provides as follows:—

SECTION 80. Any liquor so forfeited shall, by the authority of the written order of the court or trial justice, be forwarded by common carrier to the chief of the district police, who upon receipt of the same shall notify said court of justice thereof. Said officer shall sell the same, and after paying the cost of the transportation of the liquors he shall pay over the net proceeds to the treasurer and receiver general. The officer who serves the order above named shall be allowed therefor fifty cents, but shall not be entitled to receive any travelling fees or mileage on account of the service thereof.

In obedience to the above law, I have received from the officers of the Commonwealth all liquors, and the vessels containing the same, which have been delivered to me as having been seized and forfeited by virtue of said act, giving my receipt for the same.

The quantity received from the cities and towns from Dec. 1, 1901, to Dec. 1, 1902, was : —

Number of seizures,	911
Quantity of spirituous liquors received,	1,378 gallons, 3 quarts, 1 gill.
Quantity of malt liquors received,	7,376 gallons, 1 quart.

Appropriations and Expenditures.

	Appropriations.	Expenditures.
Compensation of officers,	\$76,600 00	\$76,600 00
Travel,	23,300 00	20,651 47
Contingent,	2,000 00	2,079 19
	<hr/>	<hr/>
	\$101,900 00	\$99,330 66
Amount expended less than appropriation,		2,569 34

Amount received through boiler inspection department, as fees for examination of engineers and inspection of boilers, and paid into the State treasury, \$11,447 00

CONCLUSION.

It is due to my sense of gratitude that I should respectfully acknowledge the aid rendered to this department in important matters by the Attorney-General and the several district attorneys.

His Excellency the Chief Executive of the Commonwealth has always encouraged me in the discharge of my duty by most cordial support.

It has always been my aim to take care that the District Police shall act within the strict limits of the law, and the highest standard of personal and official rectitude.

Respectfully submitted,

RUFUS R. WADE,
Chief Massachusetts District Police.

INDEX.

	PAGE
District Police force,	6
Employment of children,	9
Employment of illiterate minors,	10
Amended form of printed notice,	12
Wholesome drinking water during working hours,	14
Elevators,	14
Sanitary provisions in factories and workshops,	16
Inspection of boilers and engineers' license laws,	17
Manufacture of cotton fabrics and improvement in factories and factory life,	18
Modern schools,	21
Ventilation in school and public buildings,	24
Ventilation practically considered,	25
Description of plans for heating and ventilating school buildings,	27-31
Reports of inspectors of factories and public buildings,	32-59
Reports of boiler inspectors,	59-65
Reports of clothing inspection department,	66-69
Summary of inspection work,	68
Recommendations,	69
Detective department,	73-82
Reports of accidents,	85-102
Forfeited liquors,	102
Appropriations and expenditures,	103

32

1902

Mass. Chief of district police

Report

WITNESS

